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Canada Tariff Board



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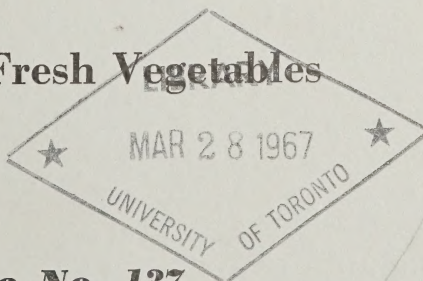
Report (by) of

THE TARIFF BOARD

in Reference [s].

(Relative to the Investigation Ordered
by the Minister of Finance
respecting

**Machinery and Equipment
for
Fresh Fruit or Fresh Vegetables**



Reference No. 137



Report by
THE TARIFF BOARD

Relative to the Investigation Ordered
by the Minister of Finance
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for
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1966

THE TARIFF BOARD

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Léo Gervais

Economist: M. Rachlis

The Honourable Mitchell Sharp, P.C., M.P.,
Minister of Finance,
Ottawa, Ontario

Dear Mr. Sharp:

I refer to your letter of June 9, 1965,
in which you requested the Tariff Board to conduct
an inquiry respecting machinery and equipment for
fresh fruit or fresh vegetables.

In conformity with Section 6 of the
Tariff Board Act, I have the honour to transmit
the Report of the Board relating to machinery and
equipment for fresh fruit or fresh vegetables in
English and in French. A copy of the transcript
of the proceedings at the public hearing accom-
panies this Report.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "J. C. Caudette". The signature is fluid and cursive, with a long horizontal stroke at the end.

Chairman

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Explanation of Symbols Used

- Denotes zero or none reported
- .. Indicates that figures are not available
- * In statistical tables, indicates a reported figures which disappears on rounding, or is negligible
- (a) A small letter in brackets denotes a footnote to a table
- (1) A number in brackets denotes a footnote to the text
- s.c. Denotes a Dominion Bureau of Statistics import or export statistical class
- (p.____) Following a quotation, denotes the page number from the transcript of proceedings or from another noted reference.

THE TARIFF BOARD

Reference No. 137

An Inquiry Respecting Machinery and Equipment
for Fresh Fruit or Fresh Vegetables

Foreword

The letter from the Minister of Finance, dated June 9, 1965, directing the Tariff Board to conduct an inquiry respecting machinery and equipment for fresh fruit or fresh vegetables is as follows:

"I have received representations to the effect that tariff item 409e(2) in so far as it relates to machinery and equipment for fresh fruit or fresh vegetables is in need of revision and review. It has been suggested that item 409e(2) be broadened to include other machinery and equipment used in conjunction with the apparatus now provided for under that item.

"I, therefore, direct the Tariff Board to make a study and report under Section 4(2) of the Tariff Board Act on tariff item 409e(2) in so far as it relates to machinery and equipment for fresh fruit or fresh vegetables, and on such other items which the Board considers relevant to its enquiry.

"If the Board's study should indicate that amendments to the Customs Tariff are desirable, I would request the Board to submit its recommendations respecting such amendments."

Public hearings before the Board were held at Ottawa on November 15, 1965, and on April 18 and 19, 1966. Representations were made to the Board by the following companies and associations:

*S.A. Armstrong Ltd., Toronto, Ont.

*Associated Equipment Company, Willowdale, Ont.

Atlantic Research Corporation, Alexandria, Virginia, U.S.A.

British Industrial Truck Association, London, England

Campbell Soup Company Ltd., Toronto, Ont.

Canadian Electrical Manufacturers Association, Toronto, Ont.

Canadian Food Processors Association, Ottawa, Ont.

Supported by:

Maritime Food Processors Association, Kentville, N.S.

Ontario Food Processors Association, Toronto, Ont.

Quebec Food Processors Association, Verdun, P.Q.

Western Food Processors Association, Vancouver, B.C.

The Canadian Horticultural Council, Ottawa, Ont.

Canadian Refrigeration & Air Conditioning Association,
Toronto, Ont.

Clark Equipment of Canada Ltd., St. Thomas, Ont.
 *The Electric Storage Battery Company (Canada) Ltd.,
 Toronto, Ont.
 Exact Weight Scale Co. (Canada) Ltd., Toronto, Ont.
 *Gould-National Batteries of Canada Ltd., Toronto, Ont.
 *The J. Hardt Mfg. Inc., Lachine, Que.
 The Hobart Manufacturing Company Ltd., Don Mills, Ont.
 Machinery & Equipment Manufacturers' Association of Canada,
 Montreal, Que.
 *Produce Supply and Service Company Ltd., Lambeth, Ont.
 *Toledo Scale Company of Canada Ltd., Windsor, Ont.
 *Victory Conveyor & Machine Inc., Montreal, Que.

* Not represented at the public hearings

Introduction

This Reference deals with machinery and equipment for handling fresh fruit and vegetables. Those who grade and pack fresh produce proposed that the existing tariff provisions be expanded to include some equipment not now included; equipment for refrigeration and controlled atmosphere storage was of particular interest to the fruit and vegetable packers. The manufacturers of certain types of machinery sought the retention of the existing duties to protect their interests.

This section of the report is divided into three parts. The first describes the type of machinery and equipment within the terms of the Reference and its use. The second part outlines the demand for the machinery and equipment, the nature of this demand, its regional nature and sources of supply in Canada and abroad. The third part deals with the representations made to the Board.

The scope of the study is confined mainly to what is described as the packing plant or the grading line; it does not extend to equipment used in the field or orchard or in processing beyond the fresh stage. Grading and packaging operations may be performed in more than one location before the produce is sold and the report encompasses the machines and equipment wherever so used. Potatoes, for example, may be graded in the initial packing plant and put into bags too large for general consumer acceptance; a wholesaler or retailer may regrade and repack them into smaller bags; in either case the equipment used is within the terms of this Reference.

For the purposes of this study, fresh fruit and fresh vegetables are produce whose natural form has not been altered except for trimming as part of a cleaning and packing operation; their shape and texture have been unchanged in the process. The produce has not been cut, frozen, or preserved in brine, sugar, alcohol or any other substance. Also for the purposes of this study, fresh vegetables include fresh mushrooms; they are commonly thought of by consumers as vegetables and are used as such.

The Grading Line

The substantial size of the fruit and vegetable market and the different preferences in parts of the domestic and export markets have resulted in a demand for produce of known size and quality, packed in a variety of ways. There are provincial and federal laws and regulations to ensure that produce meets certain specifications before it can be offered for sale or transported to another province or country. The regulations establish the standards for such factors as maturity, size, colour, cleanliness, and amount of damage permitted for various grades. They also specify the permissible kinds and sizes of packages and the markings to be put on packages. Produce is inspected in packing plants, wholesale warehouses and retail stores to ensure compliance with the regulations.

Fresh produce is ordinarily stored as it is received and is graded and packed only in immediate anticipation of market demand. Graded produce is kept in storage as short a time as possible since the grade may change as a result of deterioration in storage.

The equipment for grading and packing fresh fruit and vegetables is usually housed in a warehouse-like building part of which is frequently refrigerated storage; these are commonly referred to as packing or grading plants.

A grading plant may contain only the minimum of equipment to enable cleaning and grading of fruit or vegetables; alternatively, it may contain a large array of machines designed to clean, wash, sort, weigh and package fresh produce, together with a complex system of conveyors of different kinds, all coordinated to move the produce through the various stages. The extent of mechanization and the kinds of equipment are related to the produce being handled and the nature of the market being served.

For example, although large, highly-mechanized installations are sometimes used to grade and pack potatoes, a substantial portion of the potato crop is graded and packed in small establishments using a minimum of mechanical equipment. Many potato grading plants are essentially farm storages containing a simple moving belt arrangement. At the other extreme are large apple grading plants, some of which may handle as many as half a million bushels in a season. The operations in such plants involve equipment such as immersion dumpers, leaf-eliminators, washers, dryers, singulators, sizers, sorting tables, weighing devices, carton stapling machines and a variety of associated equipment including different kinds of chain and belt conveyors, power curves and electrical controls.

While the main functions of a grading line are similar for different kinds of produce, the actual operations performed depend on the product handled. Potatoes, for example, may or may not be washed, but onions are never washed; great care is exercised in handling peaches or apples; much less care is required in handling potatoes. Sometimes the grading is done entirely by hand and by visual inspection because the product, for example strawberries, is too tender to be handled by machine; in such an instance the line may be merely a wide belt forming, in effect, a moving table in front of the sorters who remove undesirable produce and sort the remainder into various grades. In other cases, the grading may be done by sorting the produce mechanically according to size or weight with all other operations being done by hand. The kind of equipment used is also determined by the shape of the product. For example, an apple requires a different kind of sizer from that needed to size carrots or parsnips, and a sizer capable of handling spherical potatoes is not adapted to sizing long potatoes of the Idaho type. There are, therefore, great variations in the amount and complexity of machinery used in grading and handling fresh fruit and fresh vegetables.

Every line, however, is characterized by a high degree of human participation since little of the actual grading or classifying is done by machine. For example, men place the bin of apples on the hydraulic hoist of the dumper and remove the bin once the apples have been emptied from it. A number of operators are stationed along the line to sort, size, weigh and package the produce.

The Grading and Packing of Apples

At the hearing it was estimated that about eighty per cent of the sales value of grading line equipment is for use in apple packing plants. The equipment used in grading apples is illustrative of that used generally for fresh produce.

Apples are received from the orchard in bins or boxes. The bin is preferred because it holds more and is convenient for use with the receiving equipment in the line. A bin of apples weighs nine hundred pounds, equivalent to twenty bushel boxes.

Bins may be taken on a fork lift truck directly to the grading line or they may be placed in cold-storage and graded at a later date. When the apples are to be graded, the full bin is placed on the forks of a mechanical dumper. If it is a dry dumper, the forks are raised hydraulically and are tilted so that the apples spill on to a table from which a conveyor belt carries them forward to the next step. If it is an immersion dumper, the hydraulic forks lower the full bin of apples into a tank of water. The apples float out of the bin and are carried by a jet or moving stream of water to the next stage of the operation. The water in the tank removes the apples from the bins without damage and washes away some of the dirt, leaves and twigs. Frequently a screen is placed in the tank to catch leaves and other debris and thus facilitate their removal from the tank. A moving belt may be installed vertically in the tank; it engages leaves and other debris floating in the water, lifts them over the end of the tank and drops them into a container.

After leaving the dumper, the apples pass onto a cull-eliminator, a moving belt with holes through which apples too small for fresh sale fall and are removed as culls. The culls are carried away on another belt and are dumped into boxes for removal, usually to another plant, for processing into juice, pie filling or apple sauce. From the cull-eliminator, the apples pass on a conveyor belt through a box-like structure where they are subjected to sprays of water to remove any remaining dirt and residues of pesticides.

The apples are then passed over rows of rapidly revolving, soft, bristle brushes which dry and polish them; polishing assists in the detection of flaws in the apples at a subsequent stage. The brushes may be placed at right angles to the general flow of the line; as they turn, they dry and polish the fruit and roll it forward. Alternatively, the brushes may be in the form of a long spiral and set in rows parallel to the direction of the packing line. As they turn, they dry and polish the apples and the spiral grooves carry the apples forward. An advantage claimed for spiral brushes is that they keep the apples separated from one another and thus avoid damage.

Apples may be sorted into various grades either before or after they are sized. If grading precedes sizing a sorting table follows the drier. This table consists of rows of rollers which rotate the apples as they are carried past the operators who sort them into grades, placing each grade on its particular belt. If grading follows the sizing operation packers along the reverse flow belts or at the rotary tables, which follow the sizer, sort the fruit according to grade, as they pack.

The sizing operation is based either on the circumference of the fruit or its weight. In either instance the apples are first assembled into one or more single lines by a device called a singulator so that they will enter the measuring device one at a time.

The weight sizer consists of rows of metal or plastic cups attached to endless belts moving in the direction of the line. Each apple falls into a cup and moves down the line past stations where there are pre-set counterbalances. When the weight of the apple exceeds that of the counterbalance the cup discharges its apple onto a belt which moves at right angles to the direction of the line. They are discharged from this belt onto a reverse-flow belt, situated at the side of the sizer and are here collected for packing.

Dimensional sizers may be of different kinds. However, a common form of dimensional sizer consists of a series of revolving wheels made of a soft material and mounted at varying heights above a belt moving in the direction of the line. The heights can be varied to accommodate apples of different circumferences and the heights of the wheels are set progressively closer to the belt. As indicated above, the apples are assembled into single file by the singulator and are moved past the pre-set wheels. A small apple would pass the first wheels without being touched by them; however, each apple eventually encounters a revolving wheel which expels it from the sizer belt.

Apples of predetermined weights or sizes are collected on reverse flow belts, rotary tables or tubs from which they are packed in containers such as baskets, boxes or bags. Apples intended for distant markets are often packed by hand in cell-pack boxes in which the apples are separated from one another by partitions. The fruit in such a pack is of a uniform size and the box is marked to indicate the size or count. If the fruit is to be packed in plastic bags it is directed by the moving belt or revolving table to a small chute. When a predetermined weight is reached, the flow of fruit is automatically cut off. The operator then tilts the chute to discharge its contents into the bag and closes the bag, using a machine that gathers the neck and surrounds it with a tape, wire or ring.

Filled boxes, bags or baskets are placed by the operators on nearby belts or roller conveyors which may or may not be powered. Some conveyors are quite elaborate, being equipped with electronic devices to direct packages of different size or type to different locations. It is generally here that containers other than plastic bags are closed. Boxes may be glued shut or may be closed by a stapling machine which staples the top and bottom flaps simultaneously. The containers undergo a final inspection at this point and are marked to describe the grade, size and variety of the contents.

After packing, the apples are moved to cold storage where they await shipment. As a rule, shipment takes place soon after grading and packing.

The Grading and Packing of Potatoes

Whereas most apples undergo a series of operations even in a plant which is not highly mechanized, potatoes are frequently graded and packed in plants where the only mechanical equipment used is a

belt with holes to allow undersized potatoes to fall through and a belt to move the product past the operators who remove damaged or otherwise rejected potatoes. The following describes a fairly highly-mechanized operation which would be found in a plant with a large capacity.

In such a plant, potatoes received from the field are dumped into a hopper or onto a table from which they are removed by conveyor belts. They pass over a belt or chain conveyor with holes which allow undersized potatoes to drop through and be taken away as culls. The others move on belts to rows of revolving brushes which brush away earth and debris. Sometimes, they pass through a spray washer.

After being cleaned, the potatoes move on a wide belt past a number of operators for inspection and removal of rejects. Potatoes which are spherical in shape are sized by dropping through holes in a moving belt onto other belts which carry them away for packaging; oblong potatoes are generally sorted on a weight sizer.

Most commonly, potatoes are bagged for market. The bags may be plastic, paper or burlap and contain from ten pounds (sometimes less) up to one hundred pounds. Generally, plastic and paper bags are used for the smaller weights and burlap bags are used to pack seventy-five and one hundred pound quantities.

The smaller packages may be filled by using a bag filler similar to that described for apples; larger packages are usually filled and then weighed on platform scales. When filled and weighed, the bags are closed by sewing by hand or by having a ring of wire, plastic or tape placed around the neck. Fork lift trucks or other similar transporters move the packaged potatoes to storage or to trucks or railway cars.

Some baking potatoes are wrapped in foil or are packed in cardboard cell-pack containers similar to those used for apples. These potatoes are specially selected and are uniform in shape. They are weight-sized within narrow limits and each box of foil-wrapped potatoes contains the same specified number.

Other Grading and Handling Equipment

Some kinds of produce require special equipment. For example, onions, which must remain dry, are cleaned by passing them over a vibrating table to remove loose skins, earth and other debris. An exhaust fan above the table sucks up the dust which is created.

Carrots and parsnips pose special sizing problems because of their shape. Sizers for these vegetables consist of tapered rollers set parallel to the flow of the grading line and inclined downward. The vegetables pass over these rollers until the space between the rollers becomes wide enough for them to drop through onto a belt or chute where those of similar size are collected and moved away for packaging.

Turnips are graded almost entirely by hand and are usually waxed after grading. The waxing equipment is relatively simple and consists of a conveyor belt which carries the turnips through a bath

of liquid wax at a rate of speed which allows the required thickness of wax coating to be deposited on the turnips.

Spinach is prepared for market by washing and hand-culling of damaged or otherwise unsuitable leaves. It is dumped from the bushel baskets in which it is received from the field into a revolving wire cage to remove stones and soil. It then goes through washing tanks and spray washers for further cleaning and is hand-culled before being packed in plastic bags.

A piece of equipment frequently used to weigh and bag fresh produce is the "Baker head". It consists of a circular table around the perimeter of which are arrayed six or eight "over-and-under" scales. The table is powered and turns in such a manner that each bag, in turn, is brought into position under a discharge spout at the end of the grading line. The vegetables are discharged from the spout into the waiting bag; when produce in excess of a predetermined weight has entered the bag, the flow is automatically cut off and the table revolves to bring the next bag under the spout. By this system bags contain more than the weight marked on the bag and operators around the perimeter of the table substitute smaller vegetables for larger ones if the overage is excessive. This is done while the table turns and before the bags reach the position at which they are sealed.

Another piece of equipment used in conjunction with some grading lines is a box filler which receives produce from a conveyor belt and directs it via a canvas chute to a waiting box or bin. The box may stand on a platform which turns as the produce enters in order that the fruit or vegetables are distributed evenly over the area of the box. The chute rises as the box fills so that the produce is deposited in the box with a minimum of drop to avoid bruising.

Movable stands, large enough to hold one box while it is being packed, are usually placed beside the packing tables as an aid to the packer. Even these stands differ in design and method of construction.

Weighing devices are used extensively in the grading lines for fresh fruit and fresh vegetables. Some of these are incorporated into other pieces of equipment as, for example, the Baker head described earlier. They are associated commonly with the chutes used in filling bags and they are an integral part of the weight sizers for apples or potatoes. In the chute-filling machines and the Baker head, the function of the weighing device is to activate a barrier which cuts off the flow of product as soon as it exceeds a predetermined weight. Thus, the weighing mechanism controls the amount of produce in the chute and not that in the bag; an operator empties the produce from the chute into the bag. Platform scales are used to weigh large bags of produce or to weigh pallets loaded with containers filled with fruit or vegetables.

Some weighing machines are built in association with calculating machines; these will weigh a package and, given a unit price, will calculate the value of the produce and print a ticket or label showing weight, unit price and total value. Variations of this type of machine are capable of calculating the total value by count instead of by weight. These electronic weighing, calculating and printing

machines are used principally for meats but they may be used for fresh fruit and fresh vegetables as well. They are used mainly in retail stores because the selling price per unit is generally not known previously.

Some of the equipment used in grading and packing fresh fruit and vegetables is of fairly standard design, for example, the Baker head; other equipment, particularly that used for products handled in smaller quantities, such as spinach, turnips and parsnips is often designed by the packing plants themselves. The devices designed by the plants are often very ingenious and may be built by the plant mechanics or local machine shops. Most plants which handle a variety of vegetables use some equipment that has been designed, built or modified by their own employees.

There are some pieces of equipment which, although they are not integral parts of the line, assist in the handling operations. Typical of these are devices such as fork lift trucks and specialized transporters of various kinds for lifting and transporting boxes or bins of produce. One spokesman indicated that there was a preference for electrically powered equipment for fruit and vegetables because of the absence of fumes.

Some transporting machines have arms which squeeze the sides of a box in order to grip and lift it. The advantage of this type is that any box in a pile can be lifted allowing the boxes under it to be moved away. This machine is known as a stacker. There are other transporters which raise the load only a few inches from the floor to enable it to be transferred from place to place.

Refrigerated and Controlled Atmosphere Storage

Refrigerated and controlled atmosphere (C.A.) storage play an important role in the storage of fresh produce. The period during which products are harvested is usually very short. It would be generally uneconomic to set up sufficient grading and packing capacity to handle the crop as it is harvested. Cold storage and C.A. storage permit the grading and packing to be spread over a longer period of time which, in addition to permitting more efficient use of the equipment, also permits advantage to be taken of better market conditions. For example, apples which are harvested in October may still be in marketable condition in March, if they are refrigerated; the use of C.A. storage permits an even longer extension of the marketing period. Apples are now kept in C.A. storage for eight months and even longer and when removed from storage for sale may be in better and fresher condition than apples stored for only two or three months in ordinary refrigerated storage. By extending the marketable life of fresh produce, refrigerated and C.A. storage make an appreciable contribution to the returns to growers.

The refrigeration equipment for fresh fruit and vegetables is of standard design, similar in most or all respects to that used for the storage of other perishable commodities.

Controlled Atmosphere Storage

At the hearing, it was said that for optimum conditions the atmosphere in a C.A. storage room should consist of 2 to 3 per cent of oxygen, $1\frac{1}{2}$ to 2 per cent of carbon dioxide and 95 per cent of nitrogen, with a relative humidity of the order of 90 to 100 per cent.⁽¹⁾ The natural respiration of fruit consumes oxygen and in a sealed storage area will result in a lowering of the oxygen content of the air and an increase in its carbon dioxide content. The conditions of C.A. storage can be achieved if provision is made for removing the excess carbon dioxide which is formed.

There are two common methods of reducing the oxygen level rapidly, thus reaching optimum conditions much more quickly. One is to draw air from the storage area or from outside the area, pass it through a burner to consume the oxygen, pass the resulting gas mixture through a "scrubber" to remove carbon dioxide and introduce the remaining gas, mostly nitrogen, into the storage area. The composition of the atmosphere within the storage area must be controlled within narrow limits, relative humidity must be maintained between 90 and 100 per cent and the temperature must be at the correct level. In addition, the amount of ethylene, a gas generated by the fruit, must be kept below certain prescribed levels. All of these variables are controlled, more or less automatically, by various sensing and regulating devices which control the operation of the equipment associated with a refrigerated C.A. storage.

A more recently developed C.A. system employs a catalytic burner which consumes the oxygen without an open flame. The air of the storage area is circulated through the burner and the oxygen is converted into carbon dioxide which is removed; the nitrogen is returned to the storage atmosphere. Although C.A. storage is adaptable to other kinds of fruit and vegetables, at present its use is confined largely to the storage of apples.

The sugar content of potatoes may increase from one per cent at harvest to two or three per cent after being stored for some time. The presence of this relatively high content of sugar makes potatoes unsuitable for processing, for example, into chips, because the sugar is caramellized in the cooking process and the resulting product has an unattractive, dark brown appearance.

This problem is dealt with by conditioning potatoes so that they reconvert the sugar to starch. This is done by controlling the temperature and humidity. Potatoes are usually stored at about 40°F; to condition them for processing the temperature of the storage room may be raised in stages to as high as 75°F. However, this also encourages sprouting which may be controlled by the introduction of a special gas into the storage area. The potatoes may be conditioned in the room where they are stored initially, or in special rooms set aside for this purpose. The conditioning equipment consists mainly of heaters or furnaces, blowers and temperature controls.

(1) Transcript, Vol. 3, p. 403

Bananas ordinarily are placed in storage when they are unripe. Ripening can be accelerated by increasing the amount of ethylene gas in the storage area; this usually is done a day or two before removing bananas from storage. Sufficient ethylene gas is released from a high-pressure container to raise the ethylene content of the storage atmosphere to about 50 to 100 parts per million. By introducing this gas at the right time and in appropriate amounts the bananas can be ripened as required for retail sale. The use of ethylene gas in banana storages was said to be a practice of many years standing in Canada.⁽¹⁾

Controlled atmosphere storage for other products is still at an early stage of development. However, considerable research is being done in this field, relating to the use of various gases and combinations of gases and the effects of various atmospheric compositions on many products; the kinds and design of machinery and equipment that can be used for such purposes is also undergoing investigation and development.

The Market for Machinery

The description of equipment given in the foregoing indicates the wide variety that is used in grading and packing fresh fruit and fresh vegetables. As noted, the "grading line" may consist only of a moving belt or revolving platform on which the product is displayed so that operators may remove unsuitable produce. On the other hand, the grading line may consist of several complex machines, conveyor chains and belts, automatic weighing and packaging devices, tanks, hydraulic lifts and various associated machinery and controls, all of these carefully synchronized at the various stages to obtain a predetermined rate of flow of product throughout the length of the installation. A moving belt or platform may cost only a few hundred dollars; a complex setup of grading lines of large capacity may cost more than \$100,000.

The complex nature of the Canadian demand for machinery is illustrated by the wide variety of equipment and the great range in costs of particular components.

In a Tariff Board survey of grading and packing plants, referred to later in more detail, respondents listed, by name, more than one hundred different kinds of machines and apparatus used in their grading lines. The following listing gives a selection of the equipment named by respondents to the Board's survey. Costs were reported f.o.b. machinery manufacturer. In some instances the great differences in the cost of the same component reflect purchases of machines with automatic devices or other special features; in other instances the differences in cost may be due to differences in size or capacity of the relevant piece of equipment.

(1) Transcript, Vol. 3, p. 455

Equipment Used in Grading and Packing Lines for
Fresh Fruit and Fresh Vegetables, Reported Cost of Selected Components

<u>Description</u>	<u>Cost, f.o.b. Manufacturer</u>		
	<u>Lowest</u>	<u>Highest</u>	<u>Weighted Average</u>
	- d o l l a r s -		
Box or bin dumper, dry	243	2,075	1,006
Immersion dumper	1,247	7,799	3,844
Combination washer-brusher	1,921	4,850	2,502
Washer	512	3,300	1,986
Brusher, dryer	175	3,828	841
Sizing equipment	500	6,249	1,852
Box, bin or bag filler	310	5,521	2,145
Scales	194	2,075	484
Combination bagging & weighing	5,260	13,762	8,569
Top and bottom stapler	1,208	2,367	1,699
Bag tying machine	1,150	2,951	2,321
Other container closing equipment	50	3,000	602
Belt conveyor	135	5,292	706
Roller conveyor	45	2,100	275

Source: Tariff Board survey

It is apparent from the table that grading lines can vary greatly in cost. For example, the cost of the immersion dumpers varied from about \$1,200 to \$8,000 and sizing equipment from \$500 to over \$6,000, depending on design and capacity. In addition, the layout of the line and its location relative to the receiving and storage facilities of the plant would also have an important bearing on the cost of equipment required, particularly of conveying devices. As noted in the table, the cost of belt conveyors varied from \$135 to more than \$5,000 per unit, depending, for example, on length. If a grading and packing layout is not carefully designed it could easily require conveying devices costing considerably more than in a well-designed plant.

Two apple grading lines were examined in some detail to assess some of the differences in cost which individual plants have actually incurred in recent years. One was a plant with a maximum rated capacity of about 150 bushels per hour; the other was a much more elaborate installation having a maximum rated capacity of 400 bushels per hour. The first is in operation in southwestern Ontario, the other in British Columbia. In both examples the equipment was installed in the past few years.

For each line in the following illustration the principal components are grouped according to function. It is important to note that the larger capacity of the second plant is achieved by installing three lines. Differences in cost arise mainly from this fact. However, considerable differences also arise from the type of equipment and the plant layouts. Also, the larger plant handles a greater variety of packages than the smaller plant.

A Comparison of Two Grading and Packing Installations,
Showing the Cost of Principal Functions

<u>Function</u>	<u>Cost, f.o.b. Manufacturer</u>	
	<u>150 bushels</u> <u>per hour</u>	<u>400 bushels</u> <u>per hour</u>
	- d o l l a r s -	
Dumping	6,962	18,514
Cleaning & brushing	3,472	6,369
Sizing	1,200	36,052
Weighing	1,382	4,121
Package closing	1,947	9,853
Conveying	<u>10,992</u>	<u>21,591</u>
	25,955	96,500

Source: Tariff Board survey

Therefore, in assessing the market for machinery that is available to a Canadian supplier, it is worth noting the large variety and relatively small value of many of the individual components that he would be called upon to supply. Moreover, for a particular component, the manufacturer must be prepared to offer a wide range of types and sizes. Whatever his own principal line of manufacture, the Canadian supplier would be obliged to purchase some components from other companies, in Canada or abroad, to complete the line. The alternative, the one generally followed in Canada, is simply to sell components of his own manufacture (for example, bins and tanks, conveyors or weighing equipment) and not attempt to supply an entire integrated line of equipment. The orders he is likely to receive will arise largely from a packing plant's need for replacement parts or from alterations in plant layout and design rather than from initial installations for elaborate new plants.

Each grading line, of any complexity of design, is usually a custom installation. The companies that design and install complete grading lines determine the needs of the plant and bring together the required components either by building them or buying them from other manufacturing companies. The owners of a grading plant may, of course, assemble their own grading line, perhaps making some of the simpler parts and purchasing other components from one or more manufacturers.

In some regions of Canada there are companies which manufacture parts of the line and which may be prepared to manufacture other parts to special order. In the fruit growing region of south-western Ontario, for example, there is at least one manufacturer who makes sizers, sorting tables and other equipment for grading apples, peaches and other fruit and who will supply and install a complete grading line. Most of this equipment is sold in that region. It was said at the public hearing that the company does not have the capacity to manufacture this equipment on the scale required by larger plants in British Columbia which are, in any event, located much closer to U.S. manufacturers and designers of complete lines. In New Brunswick and in Nova Scotia several companies make grading

equipment for potatoes that has won a local market and some equipment is being shipped to adjacent areas in the United States. In most localities there are metal fabricators and machine shops able to make tanks and other equipment to specification.

In most instances the companies which manufacture fruit and vegetable handling equipment in Canada are engaged, primarily, in some other business activity. The Canadian market for grading and handling equipment is scattered from coast to coast. Considering the large variety of machinery and taking into account the tremendous distances, it is not surprising that no Canadian manufacturer serves the market on a national scale. Thus, while some of the machinery used in fruit and vegetable grading lines is made in Canada, most of it is imported from the United States and a very little from other countries.

The Size of the Market

The size of the Canadian market for grading and packing equipment for fresh fruit and vegetables is difficult to assess.

Imports of fruit and vegetable machinery entered under tariff item 40920-1, for the nine-month period, October 1965 to June 1966, were valued at approximately \$655,000, suggesting annual importations of about \$900,000. In addition some fruit and vegetable machinery probably was also entered under tariff items such as 42701-1 ("All machinery composed wholly or in part of iron or steel, n.o.p.; parts of the foregoing"), or 42720-1 ("All machinery composed wholly or in part of iron or steel, n.o.p., of a class or kind not made in Canada; complete parts of the foregoing"). Total imports of the relevant machinery and equipment probably would be about one million dollars annually.

To evaluate the extent to which packers invest in machinery and equipment, to get some idea of the potential demand for machinery in different regions, and to estimate the extent to which the demand is supplied by imported machinery, the Tariff Board conducted a survey.

The replies of 49 plants were tabulated; twenty-five of them were in British Columbia, eleven were in Ontario, five were in Nova Scotia and the remaining eight were scattered in five other provinces. Most of the replies were from plants which packed fruit, apples being their principal crop. The plants replying to the Tariff Board survey were mainly the larger ones. In the three years, 1963-65, the 49 respondents accounted for about one-third of the total Canadian apple crop, 20 per cent of the pears, 43 per cent of the apricots, 10 per cent of the plums and prunes, 15 per cent of the cucumbers and parsnips, and almost 10 per cent of the carrots and onions; for no other crop was the coverage extensive.

Total purchases of the relevant grading-line machinery for the 49 plants amounted to \$588,285 in the three years, or, on average, \$196,095 a year.

The Tariff Board's survey of purchases of machinery by grading and packing plants showed that about 80 per cent of the relevant equipment purchased in the three years, 1963-65, was imported. When applied to the estimated annual imports of one million dollars, this suggests annual purchases of Canadian-made equipment valued at about \$250,000. The Board's survey is not representative of potato grading and packing, nor of grading operations for most other vegetables. Although potato grading and packing operations are generally not highly-mechanized relative to apple grading, in total they probably represent a significant market for machinery, a large proportion of which undoubtedly is of Canadian manufacture. In 1964, for example, Canada produced about 2.4 million tons of potatoes, more than five times the tonnage of apples produced in that year. These potatoes were valued at \$138 million, more than four times the value of apples. Data on various crops in the different regions are given in Appendix I. When allowance is made for the machinery required for potatoes and other crops, annual sales of domestically produced grading line equipment might be about \$500,000.

The above estimate of domestically produced machinery and equipment receives some support from data published by the Dominion Bureau of Statistics on sales by Canadian companies of equipment for fresh fruit and vegetables. While these data do not necessarily include all of the grading line machinery and equipment here under review, they do include some machinery imported by the companies for resale. According to these data, sales by Canadian companies of equipment covered by the report averaged \$356,000 annually in the five years, 1960-64, and increased from \$154,000 in 1960 to \$553,000, in 1964.

Sales^(a) of Equipment for Preparing Fruit and Vegetables
for Market, Selected Years, 1955-64

	<u>Sorters and Graders</u>		<u>Other, Including</u>	
		<u>Fruit and other</u>	<u>Washers, Vegetable</u>	
	<u>Potatoes</u>	<u>Vegetables</u>	<u>Tying Machines, etc.</u>	<u>Total</u>
	<u>- d o l l a r s -</u>			
1955	13,608	62,029	275,145	350,782
1957	25,179	45,141	303,989	374,309
1959	10,476	(b)	257,897	268,373
1960	14,427	(b)	139,803	154,230
1961	16,269	(b)	193,140	209,409
1962	17,222	(b)	306,602	323,824
1963	43,345	(b)	494,102	537,447
1964	14,220	(b)	538,714	552,934

(a) Sales to dealers by companies whose major activity relates to farm equipment

(b) Included in "other"

Source: D.B.S., Farm Implement and Equipment Sales, Cat. No. 63-203

Thus, total investment in grading and packing equipment is perhaps about \$1.5 million a year. Of this total, about two-thirds of the machinery would be imported and one-third produced domestically. This total refers only to machinery and equipment used in the grading line; it excludes refrigeration and C.A. equipment and transportation equipment such as fork lift trucks.

Although adequate data are not available to estimate the value of purchases of refrigeration, C.A. and transporting equipment some orders of magnitude can be illustrated with the following data. A medium-sized cold storage plant with a capacity of 50,000 bushels of apples would cost about \$60,000, including the cost of the building and the refrigeration equipment. If this plant were built as a C.A. storage its cost would be about \$100,000. Of the additional \$40,000, the cost of the associated C.A. equipment, installed, would be of the order of \$18,000 and the remaining \$22,000 would cover the additional insulation and other construction features required to make the storage area almost air-tight.

No information is available regarding the amount of refrigerated storage for fresh produce added in recent years; in any event almost all cold storage facilities can be used for storing fresh fruit and fresh vegetables. However, between September, 1964 and October, 1966 Canadian C.A. storage capacity rose from 2.4 million bushels to 3.2 million bushels, an increase of about 800,000 bushels and involved 18 new facilities. At an average installed cost of 25 to 35 cents per bushel capacity⁽¹⁾ the C.A. equipment installed in those two years would cost about \$100,000 to \$140,000 per year.

For some of the 18 new facilities, C.A. equipment would have been installed for existing cold storage rooms; for others it would have required the construction of new refrigerated storage capacity. If one-third of the new C.A. capacity was also new cold storage capacity, the average addition of cold storage per year would have been 130,000 bushels. At \$1.65 per bushel of capacity the cost of the additional C.A. storage, inclusive of the buildings and the refrigeration equipment, would have been about \$215,000. Thus, the combined investment in refrigeration and C.A. capacity would have been between \$315,000 and \$355,000 in each year.

The available data on transportation and stacking equipment for use in fruit and vegetable packing plants is even more meagre. The respondents to the Tariff Board survey reported purchases of about \$290,000 worth of this type of equipment, or an annual average purchase of about \$100,000. This might suggest total purchases of transportation and stacking equipment by the industry of about \$200,000 per year.

For the firms surveyed by the Tariff Board, 44 per cent of their purchases of relevant machinery was grading line equipment, 22 per cent was transporting equipment and the remaining one-third was refrigeration and C.A. equipment.

(1) Transcript, Vol. 3, p. 423

With respect to grading line equipment, as shown in the following table, complete lines accounted for one-third of the purchases by the 49 plants. Four groups -- conveying, filling and weighing, dumping, and cleaning, washing and drying equipment -- varied from 12 to 16 per cent of total purchases; purchases of sizing and package closing equipment were each about 5 per cent of the total.

Purchases of Grading and Packing Equipment by 49 Plants,
by Function, 1963-65

<u>Function</u>	<u>B.C.</u>	<u>Other^(a)</u> per cent of total	<u>All Returns</u>
Dumping	18.2	7.0	12.6
Cleaning, washing & drying	6.2	17.3	11.8
Sizing	0.1	9.4	4.8
Filling and weighing	12.3	19.7	16.0
Package closing	4.9	5.7	5.3
Conveying	14.6	18.2	16.4
Complete lines	<u>43.7</u>	<u>22.7</u>	<u>33.1</u>
Total	100.0	100.0	100.0

(a) Mainly Ontario and Nova Scotia

Source: Tariff Board survey

Considering the value of the crops handled and the substantial up-grading in value that results from the packing operation, the annual investment in machinery and equipment by packing houses appears to be small. There are a number of reasons for this situation, but the principal one is that a large number of fruits and vegetables undergo very little mechanical handling in the grading and packing process. In fact, the Board was informed that apple packing plants account for about 80 per cent of the total market in Canada for the grading and packing equipment used for fresh fruit and vegetables, though apples, in 1964, accounted for only about 11 per cent of the farm value of commercial production of all fruit and vegetables (less than \$32 million out of a total of more than \$280 million). A related reason for the relatively small investment is that for some crops the selling season and hence the packing season is short. Heavy investment in equipment is less justified in these circumstances; a heavier short-term outlay for labour during seasonal peaks of activity may be more justified. Moreover, a large part of a plant's total capital investment is in the building rather than in the machinery. A large part of the building cost, in turn, represents the need for large storage areas, much of which, to be refrigerated, requires heavy insulation, pipes, air ducts and so on.

The almost certain substantial underutilization of packing capacity for much of the year makes large investment in equipment more difficult to justify and this, in turn, seriously limits the possibilities for substantial manufacture in Canada of integrated packing lines. The period during which most Canadian plants pack apples at

or near capacity is normally only about three months a year. Stocks of apples in storage reach a peak near the beginning of November; by February 1st nearly two-thirds of Canadian stocks have been withdrawn for sale to consumers. Most of the apples remaining in storage at April 1st would be in C.A. storage.

Stocks of Apples in Cold Storage and Wholesale Warehouses, ^(a)
Selected Provinces, November 1, 1965 to June 1, 1966

	<u>Nova Scotia</u>	<u>Quebec</u>	<u>Ontario</u>	<u>British Columbia</u>	<u>Canada</u>
	- thousand bushels -				
<u>1965</u>					
Nov.	1,225	3,237	3,212	3,639	11,785
Dec.	941	2,849	2,814	2,705	9,722
<u>1966</u>					
Jan.	604	2,218	2,407	1,822	7,334
Feb.	300	1,578	1,889	977	4,941
Mar.	140	1,324	1,489	577	3,667
April	70	868	1,104	282	2,415
May	16	515	731	108	1,440
June	5	243	397	23	703
July ^(b)	..	..	..	..	..

(a) As of first business day of each month

(b) Cold storage statistics for apples are collected only from
November to June

Source: D.B.S., Fruit in Cold Storage and Wholesale Warehouses in
Canada, Cat. No. 32-010

It will be seen from the above table that even if no excess packing capacity existed in December and January when withdrawals from storage were nearly 2.4 million bushels a month, there would be only about 50 per cent utilization of capacity when the February and March withdrawals were being packed. By the same comparison, April withdrawals would require only about 40 per cent of the December-January capacity and May, only about 30 per cent. While some plants, with C.A. storage, undoubtedly would be operating at a much higher rate than these comparisons suggest, other plants would be idle, or nearly so, by April.

It should also be noted that year to year variations in the size of crops have an important bearing on the length of the period during which a plant can operate at capacity and that such variations can be very substantial. For example, the 1965 apple crop in B.C. was about two-thirds the size of the 1963 crop and in the past few years the following substantial variations occurred in the size of this province's apple crop:

	<u>Production in '000 bu.</u>	<u>% change from preceding year</u>
1962	6,051	+41
1963	8,631	+43
1964	6,902	-20
1965	5,626	-18
1966	6,827(a)	+21(a)

(a) Preliminary

Source: D.B.S., Cat. No. 22-003

Taking all of the various factors into consideration, there is not unanimity of opinion as to the advantages of mechanization in the handling of fresh fruit and vegetables in many individual plants, a fact that further increases the risk for a potential manufacturer of an integrated line of equipment in Canada. Even so, the concentration of crop handling into bigger packing plants, the increased use of refrigerated and C.A. storage to extend the packing season, shortages of suitable labour in some localities and the advantages of mechanical handling for transportation, loading, unloading and stacking have resulted in a fairly rapid increase in overall expenditures on machinery and equipment by the industry.

Some interesting comments on the situation in British Columbia were made in a report prepared by the Royal Commission on the Tree-Fruit Industry of British Columbia, published in 1958. The report stated that there was no clear and definite evidence of the effect of machinery used in packing houses on the cost of grading and packing of fruit, though it did suggest that some saving in labour costs should be possible as these costs constitute thirty per cent of the total cost of grading and packaging fruit in British Columbia.

In regard to the shortage of labour and mechanization, the report stated:

"A reason advanced at some of the hearings of packing-houses was that because of the shortage in labour and the difficulty of getting experienced help, it was sometimes necessary to install a machine, even though it would not produce any real savings. ... What they had in mind was heavy handling operations such as would be found in the stacking of boxes in a high ceilinged warehouse." (1)

Concerning mechanized operations the Commission's report stated:

"Apart from the change-over to palletized operation, most of the mechanization appears to have been installed for the purpose of reducing damage to fruit rather than to save in the cost of handling fruit." (p. 307)

(1) The Report of the Royal Commission on the Tree-Fruit Industry of British Columbia, October 1958, p. 306

The Commission, however, remarked that much of the mechanization in the fruit packaging industry at that time lacked clear economic justification.

"There is evidence that much of the mechanization which has taken place has not been preceded by economic studies to determine whether or not the capital cost would be justified by the resulting operating savings. Several cases have been observed where mechanization was not paying its way because of lack of vigilance on the part of the management. The results of this could be seen in the low utilization of mechanical equipment ..." (p. 306)

The Commission added:

"In summary, it can be said that because of the relatively short packing period experienced by most packing-houses, it is normally difficult to justify mechanization beyond the basic sorting and sizing operations ... Should controlled-atmosphere storage prove economically feasible for the storage of orchard-run fruit in the future, it may be possible to lengthen out the packing season and thus permit one packing-house to process a much larger volume of fruit. This would, by providing longer utilization of mechanical facilities, make them more feasible. The effect of the standard dumping, wiping, sorting, and sizing equipment on fruit damage should be studied carefully by the industry, with the intent of discovering ways of carrying out these processes with less damage to the fruit ... In general, it can be said also that mechanization will not reduce costs unless it is coupled with vigilant packing-house management which will see to it that the equipment and the operators of the equipment are used up to their potential." (p. 309-10)

The Commission concluded that, at that time, there was an over supply of packing-houses in British Columbia and that economies could be obtained by merging operations.

A director of the B.C. Fruit Growers Association was quoted in The Financial Post of December 25, 1965 as saying that "45% of the grower's dollar is now absorbed in the operation of packing houses. Improved transportation facilities ... have eliminated the need for a great number of separate packing houses to serve local areas."

Thus, while it is difficult to say whether there is any saving in the cost of grading and packaging vegetables through mechanization in a small plant, some economies should be expected from concentration into larger plants and from the ability to work a longer season. The fruit and vegetable packing industry in many sectors is moving away from smaller plants with old handling methods to larger, centralized plants with up-to-date equipment. Changes in design and requirements were said to be taking place rapidly. The spokesman for the Canadian Horticultural Council stated that "equipment that was all right last year is becoming obsolete now, it moves very, very fast ..." (1)

Respondents to the Tariff Board survey reported that more than half of their purchases of both domestic and foreign equipment was for operations not previously performed by machinery, one-third was for the purpose of increasing capacity in the plant, while the remainder, namely 13 per cent, was to replace worn out, obsolete or damaged equipment.

The reorganization of the packing industry is resulting in a larger market for machinery and equipment. The use of mechanical equipment in a grading line generally increases the volume of product which can be handled, even though the degree of mechanization may not be very great. The use of conveying, transporting and lifting equipment does away with much of the more arduous work but the actual grading and sorting continues to require large numbers of people. For example, a sorting or packing table may have operators on both sides to sort produce by visual inspection. Although a large degree of human participation is evident in even the most highly mechanized plants, even more people would be required if these plants were less mechanized. The increasing use of elaborate grading lines reflects, at least in part, the scarcity of appropriate labour in some areas. Because elaborate installations, to be economic, require a large volume of throughput, a larger proportion of the production of fruit and vegetables is being handled by larger-capacity packing houses.

However, present requirements and those of the near future are unlikely to bring forth a substantially greater supply of integrated packing lines from Canadian manufacturers. It seems inevitable that imported machinery, incorporating the most recent design features, will continue to supply a substantial part of the Canadian market for grading and packing line equipment. Canadian manufacturers, on the other hand, might be expected to supply a large quantity of some components, particularly the more standardized items such as fork lift trucks, conveyors, some tanks and bins, weigh scales and refrigeration equipment.

Representations and Proposals

Existing tariff item 40920-1 (409e(2)) is worded as follows:

British	Most-
Prefer-	Favoured-
ential	Nation
<u>Tariff</u>	<u>Tariff</u>

Combination bagging or boxing and weighing machines, and grading, grating, washing and wiping machines for fresh fruit or fresh vegetables; highpilers not including fork lift trucks, box dumpers, box or bag fillers, all for use in packing and storing fresh fruit or fresh vegetables; machines for making or lidding boxes for fruit or vegetables; machines for topping vegetables; machines for bunching or tying cut flowers, vegetables or nursery stock; egg-graders and egg-cleaners; silage caps; parts of the foregoings.....

Free

Free

The first public hearing on Reference 137 was held on November 15, 1965. At that hearing, the Canadian Horticultural Council made certain proposals regarding tariff item 40920-1, the principal effect of which would be to broaden the coverage of that item. The Council indicated that it also wished to make representations respecting machinery, apparatus and equipment for the refrigerated and controlled atmosphere storage of fresh fruit and fresh vegetables. The Council's spokesman suggested that a hearing on these subjects be arranged at a later date. A second hearing, beginning on April 18, 1966 was held to give those interested in refrigeration and controlled atmosphere equipment, fork lift trucks and other conveying equipment an opportunity to make their views known.

The principal proponent of a broader coverage of tariff item 40920-1 was the Canadian Horticultural Council. The spokesman for the Council pointed out that the interests he represented considered that too narrow an interpretation was being applied in the administration of existing item 40920-1.

Accordingly, he proposed that existing item 40920-1 be deleted and be replaced by the proposed items reproduced below. Included in the Council's membership are the major provincial fruit and vegetable growers' associations and national associations representing florists, nurserymen, mushroom growers, wine manufacturers and others.

The Council was opposed by manufacturers of various types of equipment used in grading lines, weighing, refrigeration and transportation and conveyance. The following national organizations also were generally opposed to the recommendations of the Horticultural Council:

Canadian Electrical Manufacturers Association
 Canadian Refrigeration and Air Conditioning Association
 Machinery and Equipment Manufacturers' Association of
 Canada

These Associations represented the manufacturers of a large proportion of Canadian production in the respective fields.

With respect to his contention that too narrow an interpretation was being placed on item 40920-1, the spokesman for the Horticultural Council suggested that Parliament had intended that all machinery and equipment used in a grading line should be entered free of duty under tariff item 40920-1 and said his proposals were intended to clarify the wording of the item to take account of technological changes in grading and packing equipment. He said all of the individual parts of such a line, taken together, constituted a "grading machine" even though some components might perform functions other than grading, sorting or classifying fresh fruit or fresh vegetables.

During the hearing on Reference 137, the Horticultural Council said that in the past, goods such as sorting tables, packing tables, cull belts and others had been ruled to be under tariff item 40920-1 and that it was only in recent years that such equipment had been ruled to be excluded from the item.

Looking back over the history of the tariff item, a progressive increase in the description of goods under the item is indicated,

presumably either to broaden its scope or to clarify the intent. For example, on May 24, 1922, the relevant provision, in tariff item 448, was as follows:

<u>Item 448</u>	<u>British Prefer- ential Tariff</u>	<u>Most Favoured- Nation Tariff</u>
Fruit or vegetable grading machines ... and complete parts of articles specified in this tariff item	10 p.c.	15 p.c.

These machines were previously dutiable under tariff item 453 at rates of 15 p.c., B.P and 25 p.c., M.F.N.; item 453 related to machinery composed wholly or in part of iron or steel.

Tariff item 448 was changed over the years both in the description of goods and in rates of duty; in 1930 it was renumbered as 409e, in 1931 as 409e(ii), in 1953 as 409e(2) and in 1965 as 40920-1. The principal changes which relate to machinery for fresh fruit and vegetables are outlined below; a complete history of the item is given in Appendix II.

Washing and wiping machines, combination bagging and weighing machines, machines for topping vegetables and for bunching and tying vegetable grating machines, box-making and box-lidding machines and complete parts thereof were specifically provided for during the 1930's and 1940's. Combination boxing and weighing machines; high pilers (not including fork lift trucks), box dumpers and box or bag fillers were added to the description of goods in 1957.

To clarify further the scope of the existing item, the Horticultural Council at first proposed a further cataloguing of goods. To accomplish this, the Council proposed deletion of existing item 40920-1 and replacement by the following five items.

"PROPOSAL FOR REWORDING TARIFF ITEM 409e(2)
(NOW 40920-1)"

40920-1 All machines, apparatus and equipment for use in the operation of cleaning, grading, packaging, storing and loading or unloading of fresh fruits and vegetables, including but not limited to

- a) Destackers
- b) Dump or feed tables or conveyors
- c) Dumpers, dry or immersion type
- d) Washing tanks including pumps and fixtures for filling and emptying
- e) Elevators
- f) Chemical applicators and sprayers
- g) Wipers, brushes and dryers
- h) Machines to eliminate leaves and foreign matter

i)	Sorting tables, colorometers, and delivery systems			
j)	Singulators			
k)	Sizing belts and machines of all kinds			
l)	Packers' tubs and tables, stationary or revolving			
m)	Machines for making, lidding or closing packages			
n)	Machines for filling and/or weighing packages			
o)	Conveyors or delivery systems of all types			
p)	High-pilers			
q)	Fork-lift trucks, tow motors, transporters			
r)	Electric motors when attached to or to be attached to any of the foregoing			
s)	Parts of the foregoing.....	Free	Free	Free
40920-2	Machines for topping and/or tying bunched vegetables; machines for baling or palletizing bunched or packaged fresh fruits or fresh vegetables;			
	Parts of the foregoing.....	Free	Free	Free
40920-3	Machines, apparatus or equipment for bunching or tying cut flowers or nursery stock;			
	Parts of the foregoing.....	Free	Free	Free
40920-4	Egg graders and egg cleaners, and parts of the foregoing.....	Free	Free	Free
40920-5	Silage caps and parts of the foregoing.....	Free	Free	Free"
				(p. 17)

By the Council's proposal the scope of existing tariff item 40920-1 would be greatly extended from the present administration and would make provision, for example, for fork-lift trucks, now specifically excluded from it. The wording of proposed item 40920-1 would allow duty-free entry of such equipment regardless of whether it was to be used in a fruit or vegetable packing plant or whether the use was exclusively for fresh fruit or vegetables. Proposed items 40920-2, 40920-4 and 40920-5 were essentially unchanged in content from the relevant parts of the existing item. However, proposed item 40920-3 departed significantly from the coverage of the existing item by adding the words "apparatus and equipment."

At the hearing on April 18, 1966, the Canadian Horticultural Council resubmitted its earlier proposals respecting the wording of proposed tariff items with several, generally minor, changes in words.

It also submitted its proposed wording for a tariff item which would provide for refrigeration and controlled atmosphere storage equipment. The proposed item relating to refrigeration and C.A. storage equipment is reproduced below:

"Machinery, equipment and apparatus for conditioning, including heating, storing, hydro-cooling or cold storing fresh fruits or fresh vegetables, including, but not limited to motors, compressors, condensers, heat exchangers, fans, blowers, coils, vacuum chambers, pumps, vacuum pumps, regulators, dials and control systems for testing or regulating air, heat, gas or humidity, and parts of the foregoing..... Free Free Free "
(p. 176-7)

Towards the end of the hearing, on April 19, 1966, the Council amended its proposals further. Its spokesman said this was in response to the opposition expressed by other interests. The Council's final proposal for amending existing tariff item 40920-1 (409e(2)) is reproduced below:

- "40920-1 Machines, apparatus and equipment including that in a grading line, for dumping, cleaning, grading, marking, branding, labelling, packaging, weighing, lidding, or closing, waxing, treating, drying fresh fruits and fresh vegetables (including fresh mushrooms); also for conveying or forwarding within or between these operations, stacking and destacking, unloading and loading associated therewith; parts of the foregoing..... Free Free Free
- 40920-2 Machines for topping and for tying bunched vegetables, machines for baling or palletizing bunched or packaged fresh fruits or fresh vegetables: parts of the foregoing..... Free Free Free
- 40920-3 Machinery, equipment and apparatus, including regulators, dials and control systems for sampling, analyzing and regulating air, atmosphere, pressure, temperature, gas composition or humidity, when used exclusively for cooling, cold storing or heating fresh fruits, fresh vegetables or ornamental plants or flowers, and only when such

equipment is for use in storage rooms having a capacity of not less than 10,000 cubic feet; parts of the foregoing.....	Free	Free	Free
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40920-4 Machines, apparatus and equip- ment for bunching or tying cut flowers or nursery stock; parts of the foregoing.....	Free	Free	Free
--	------	------	------

"It will be noted that in the above suggestions for re-wording of Tariff Item 40920-1, we have omitted any reference to the following machinery or equipment presently mentioned in this tariff item,

Grating Machines for fresh fruits and fresh
vegetables;
Silage Caps,
Egg Cleaners,

We leave it with the Board to make such provision for these items as might appear fitting." (p. 393-4)

The silage caps and egg cleaners clearly are not part of the interests of the fruit and vegetable packers. With respect to grating machines, the spokesman for the Horticultural Council said:

"It will be observed that we have omitted from our proposals the words 'grating machines'. Such a machine is not known in the fresh fruit or vegetable grading or packing industry. It is used in the production of certain processed goods, particularly apples, but this will, no doubt, be dealt with by the Canadian Food Processors' Association." (p. 25-6)

In this connection the spokesman for the Canadian Food Processors Association stated:

"I would assume, Mr. Chairman, that a 'grating machine', by its very nature, would change the form of the fresh fruit or vegetable, and I understood that the hearing was only to take in machinery and equipment up to that stage." (p. 34)

The principal difference, in respect of fresh fruit and vegetables, between this and the earlier proposals was that, in proposed item 40920-1, the enumeration of individual pieces of machinery and equipment was omitted and the list of operations was increased. It is probable that an item describing the operations to be performed would represent a further broadening of the item. The restriction by storage room capacity in proposed item 40920-3 was to meet objections of the manufacturers of refrigeration equipment, as outlined below.

The Canadian Food Processors Association, jointly with the following trade associations, supported the proposals of the Horticultural Council.

Maritime Food Processors Association	Kentville, N.S.
Ontario Food Processors Association	Toronto, Ont.
Quebec Food Processors Association	Verdun, P.Q.
Western Food Processors Association	Vancouver, B.C.

The membership of the supporting associations duplicates in large measure the membership of the Canadian Food Processors Association.

The Food Processors' interest was expressed in the following terms:

"We feel a clarification of the item is essential so that it makes no difference who imports machinery or equipment as long as it comes within this meaning of the tariff item ... Further that tariff item 40920-1 will clearly indicate that it includes all machinery and equipment used in a processing plant in the handling of fresh fruits and vegetables up to the point where the product changes its shape or texture."
(p. 91-2)

The spokesman for the Food Processors amplified his statement, saying:

"in the food processing plant many times what is done in the way of grading and washing in the packing house is deferred until it gets into the food processing plant and it is done there." (p. 92)

Later, he was asked,

"Then, your main point today ... is not to make any particular representations of your own other than: Whatever is done with this item, make sure that it is done for everyone."

He replied:

"That is right; and that everyone understands what is being done." (p. 101-2)

In a letter, dated September 30, 1965, Produce Supply and Service Company Limited described certain machines used in cleaning green peas, lima beans and other vegetables; they were referred to as scalpers, pneumatic separators, four purpose cleaners and combination dewatering and pneumatic air cleaning units. The company urged that these should be provided for in an amendment to existing tariff item 40920-1, with duty-free entry.

The Campbell Soup Company Limited, Toronto, Ontario, at first supported the views of the Horticultural Council. However, at the second hearing, the company spokesman modified the company's position, saying:

"There have been one or two points that have arisen in the course of the discussion and questioning of the Council by other interested parties, and certainly from the standpoint of using the terms for exclusive use, or the alternative term, class or kind made in Canada, I think Campbell's Soup will speak for themselves in this regard, and say that they would prefer to see the term of a class or kind not made in Canada in the items that are proposed, rather than to have class or kind proviso omitted, and for exclusive use inserted into the item." (p. 253-4)

The company's main interest was to ensure that machinery and equipment used for fresh mushrooms should be accorded the same tariff treatment as that used for fresh vegetables and requested that the Council's proposed item 40920-3 should have the words "including mushrooms" added to it.⁽¹⁾

All of the foregoing proposals would involve a broadening of the content of existing tariff item 40920-1. The proposals of the Canadian Horticultural Council would increase the scope of the existing tariff item so that it would include all of the goods specified by Produce Supply and Service Company Limited and would also apply to the machinery and equipment included in the proposals of the Canadian Food Processors Association and the Campbell Soup Company Limited.

The above proposals were opposed, generally, by a number of companies and trade associations. Their views follow in the order of their appearance at the hearings.

Hobart Manufacturing Company Limited of Don Mills, Ontario, a manufacturer and distributor of weighing and related equipment, opposed any expansion of the content of existing item 40920-1. The company also urged that the reference in the existing item to "Combination bagging or boxing and weighing machines" be amended so that free entry would be limited to those of a class or kind not made in Canada.⁽²⁾

The spokesman for the company indicated his position in the following exchange:

- Q. "...if I understand your submission correctly, there is nothing in the item now, at least on the matter of the words, at any rate, with which you are quarreling; is that right?
- A. "Just this one item, that even if the tariff item remained worded as it is now we would like the weighing devices to be of a class or kind not made in Canada."

(p. 130)

The Exact Weight Scale Company (Canada) Limited, Toronto, Ontario, also opposed the views of the Horticultural Council and its supporters. The company proposed that:

(1) Transcript, Vol. 2, p. 250

(2) Same, Vol. 1, p. 113

"...weighing machines be removed from Tariff Item 409e(2) and they would then be classified under Tariff Items 461(1), 461(2) or 461a, which refer specifically to scales. If, for some reason, this is not possible, we would request that weighing machines under Item 409e(2) be confined to those of a class or kind not made in Canada..." (p. 137-8)

Toledo Scale Company of Canada Limited, Windsor, Ontario said, in its submission, that it was the largest manufacturer in Canada of all types of commercial scales, both retail and industrial. Like the two other scale companies it urged that:

"...Tariff Item No. 409e(2) be amended to provide for the weighing machines to be confined to a class or kind not made in Canada..." (p. 146)

Associated Equipment Company, Willowdale, Ontario, in a written submission said that:

"...machines for fruit and vegetable grading, grating, washing and wiping, bagging and weighing are manufactured in Canada and should not receive the preferable tariff rate which they now receive..."

"In our opinion the bulk of the food washing and handling equipment required in Canada could be produced at the present time by Canadian manufacturers. In the event of a piece of specialized equipment to do a specific piece of work, the process for which was covered by a patent held in countries outside Canada, this equipment could be imported at a more normal tariff rate or could be manufactured under licence by a manufacturer in the country." (p. 153-4)

From the submission it is not clear whether the company was proposing deletion of tariff item 40920-1 in its entirety without any replacement. It was also not clear what was meant by the phrase "at a more normal tariff rate", although the firm is presumably interested in higher rates. The company was not represented at the hearings.

J. Hardt Mfg., Incorporated, Lachine, Quebec, a manufacturer of elevators, dumb-waiter, manlifts and special purpose lifts, objected to duty-free entry of the following: chain or roller type accumulating or feeding conveyors; dumping or feeding tables; elevators, rollers, conveyors; and elevators destacking machines.⁽¹⁾

The above companies, which opposed the views of the Horticultural Council, entered submissions for the hearing of November 1965. The following companies and associations made submissions to the Board at the hearing on April 18 and 19, 1966.

The Machinery and Equipment Manufacturers' Association of Canada, Montreal, Quebec, opposed the proposals of the Horticultural Council as going too far in enlarging the content of the existing item.

⁽¹⁾ Transcript, Vol. 1, p. 154

Its spokesman said the Association would have no objection to the duty-free importation of processing equipment that is not procurable in Canada. He also said that although the Association objects to the existence of end-use items in the Customs Tariff, it is not asking for the deletion of item 40920-1.⁽¹⁾

Objections to the proposals of the Horticultural Council were also registered by the Canadian Electrical Manufacturers Association, Toronto, Ontario. The position of C.E.M.A. was stated in the following terms:

"1. If a need is demonstrated for expanding 40920-1 along the lines indicated by the Minister in his letter to the Board dated June 9, 1965, such expansion should be accomplished by maintaining the format presently appearing in the tariff and enlarging the existing eo nomine enumerations. In our view any such additions should be limited to equipment that is not produced in Canada, nor likely to be produced in this country in the foreseeable future.

"2. Alternatively, if a broader item is deemed appropriate, duty free entry thereunder should be restricted to goods of a class or kind not made in Canada." (p. 295)

The British Industrial Truck Association, London, England, opposed the provision for fork lift trucks in the proposals of the Horticultural Council. The Association's concern was mainly that duty-free entry from both B.P. and M.F.N. countries would deprive British manufacturers of the margin of preference which they now enjoy under the existing tariff items for fork lift trucks.⁽²⁾

S.A. Armstrong Limited, Toronto, Ontario, manufacturers of washing tanks, pumps, elevators, highpilers and fork lift trucks, opposed any change in the existing tariff items applicable to the goods which it manufactures in Canada. The company also objected to the existing preferential treatment under tariff item 40920-1 being extended to include fresh mushrooms.⁽³⁾

Victory Conveyor and Machine Incorporated, Montreal, Quebec, a manufacturer of conveyors, washing machines and sorting machines, opposed duty-free entry of these types of equipment.⁽⁴⁾

The Electric Storage Battery Company (Canada) Limited and Gould-National Batteries of Canada Limited, both of Toronto, Ontario, indicated their interest in batteries used to power material-handling equipment such as fork lift trucks, tow motors or transporters. Both companies opposed the inclusion of batteries in the Horticultural Council's proposals for duty-free entry as parts of fork lift trucks, tow motors or transporters and both urged that batteries remain under tariff item 445e (44512-1), where they are now classified.⁽⁵⁾

(1) Transcript, Vol. 2, p. 274, 282

(2) Same, Vol. 2, p. 330

(3) Same, Vol. 2, p. 336-7

(4) Same, Vol. 2, p. 339

(5) Same, Vol. 2, p. 340-1, 343

Clark Equipment of Canada Limited, St. Thomas, Ontario, a manufacturer of fork lift trucks, opposed the proposal of the Horticultural Council as it applied to the equipment which the company manufactures. The company supported the position of the Machinery and Equipment Manufacturing Association that the Council's proposed changes were much too broad; it supported the stand of the Canadian Electrical Manufacturers Association that any broadening of the existing item should be limited to goods of a class or kind not made in Canada; and it concurred with the submission of the British Industrial Truck Association in opposing any action which would remove the existing margin of preference on imports of fork lift trucks.⁽¹⁾

The Canadian Refrigeration and Air Conditioning Association, Toronto, Ontario, expressed deep concern regarding the effects of duty-free entry for equipment made by members of the Association. The spokesman for the Association said:

"In view of the very broad implications, and the widespread disruption of manufacturing and sales planning which would inevitably follow the adoption of the proposal made by the Canadian Horticultural Council, we have no choice but to urge its rejection. With all respect, may we recommend extreme caution in the consideration of any proposal which would upset the present class or kind determination of the Tariff position of refrigeration and air conditioning equipment." (p. 362)

Atlantic Research Corporation, Alexandria, Virginia, a manufacturer of controlled atmosphere and related equipment supported the Horticultural Council with respect to such equipment in a statement made near the conclusion of the hearing. Its spokesman proposed that the tariff item which might apply to such equipment should be in two parts. He said:

"We therefore support the position of the Canadian Horticultural Council in their efforts to have an end-use category apply to CA equipment. We suggest that clarification of the tariff item would be aided by identifying in two separate sub-items controlled atmosphere generating equipment, and instrumentation for analyzing and monitoring such atmospheres, and thus separating these from refrigeration and refrigeration-control equipment included in the Canadian Horticultural Council's suggested wording of item 40920-3.

"The suggested wording for CA equipment is: '40920-5 Machinery, equipment and apparatus for controlling and altering the composition of, and for distributing the gaseous atmosphere in which fresh fruits or fresh vegetables are stored, including but not limited to catalytic and other types of oxygen-conversion equipment, adsorption and absorption equipment for removing CO₂ and other gases from storage atmospheres, blowers, motors, ducts and valves for controlling the flow of storage room atmosphere and

(1) Transcript, Vol. 2, p. 345-7

other gases being processed, heaters for regenerating adsorbents and for activating catalysts, and control circuit elements and activating mechanisms for regulating the function of all such equipment by manual control, automatic timers, or in response to signals initiated by process-sensing and control instruments.'

"Suggested wording for CA instrumentation is: '40920-6 Instruments, sensing elements and control devices for sampling and analyzing the fractional content of O₂, CO₂ and other gases, as well as the temperature and relative humidity of the atmosphere in controlled atmosphere storage facilities for fresh fruits and fresh vegetables, together with equipment, apparatus and devices for initiating signals, alarms and/or controlling the operation of equipment of the kind named in the preceding sub-item covering CA storage functional equipment.'" (p. 421-3)

Arguments in Support of Proposals

The intent of the proposals of the Canadian Horticultural Council remained generally unchanged throughout the hearings, although their form was modified as the result of the discussions which took place. The following deals only with the Council's proposals in their final form, as presented to the Board on April 19, 1966.

The spokesman for the Council said that since 1922 when tariff item 448, a predecessor of existing item 40920-1, was first added to the Customs Tariff, it had been amended to include other machinery and equipment used in grading, packing and storing of fresh fruit and fresh vegetables. He claimed that until sometime between 1950 and 1955, the industry which he represented had experienced no difficulties in importing machinery or equipment under tariff item 448, 409e or 409e(2).

He said that as new pieces of equipment became available in the late 1940's and early 1950's, their inclusion for entry under tariff item 409e(2) began to be questioned by the Department of National Revenue. He claimed that Parliament had intended all machinery and equipment used in grading, packing and storing fresh fruit and fresh vegetables to be entered free of duty. He said the Council's proposals were intended to clarify the wording of the tariff item and to take account of technological changes which had occurred.

Under these proposals all machines, apparatus and equipment, whether or not used in a grading line, when imported for:

"dumping, cleaning, grading, marking, branding, labelling, packaging, weighing, lidding, or closing, waxing, treating, drying fresh fruits and fresh vegetables (including fresh mushrooms); also for conveying or forwarding within or between these operations, stacking and destacking, unloading and loading associated therewith." (p. 393)

would be entered free of duty.

A comparison of the wording of the relevant parts of the existing item with that recommended by the Council indicates the increased coverage in the Horticultural Council's recommendation. By the Council's recommendations fork lift trucks would be included within the scope of the item; they are now specifically excluded. In the Council's proposals any "apparatus and equipment" would be included in addition to "machines" as now provided, and all would be eligible for duty-free entry if they performed the operations specified regardless of whether they were to be installed as a part of a grading or packing line. Equipment for labelling, conveying, loading and unloading would be specifically provided for. The provision for weighing equipment would be substantially broader than the present provision for combination bagging or boxing and weighing machines.

In its proposed item 40920-2, the Council made provision for "machines for baling or palletizing bunched or packaged fresh fruits or fresh vegetables." There was little discussion at the hearing of this particular amendment except that it was included in the general objections of manufacturing interests regarding the enlarged coverage of existing item 40920-1.

The Council's proposal for a new tariff item (numbered as 40920-3 in its proposals) would, for the first time, make duty-free provision for refrigeration and atmospheric conditioning machinery and equipment. The proposed item was worded so that it would not apply to storage rooms having a capacity of less than 10,000 cubic feet; this was done in order to meet some of the objections voiced during the hearings by Canadian manufacturers. The size limitation was to ensure that equipment for household use and small commercial installations would not qualify under the duty-free provisions.

The Council and some of its supporters said that, although some individual components of grading lines and some smaller complete grading and packing lines were available from a small number of Canadian manufacturers, most of the equipment used in grading and packing plants was not available in Canada. Emphasis was placed on the careful synchronization required for the correct functioning of a grading line and the claim was made that such a line had to be designed and installed as a complete unit rather than as a sequence of individual operations.

The Horticultural Council referred to the competition which it faced in the Canadian market from imported fresh produce and pointed out that Canada exported considerable quantities of fresh fruit and fresh vegetables. The Council's representative said the additional cost of cleaning, grading, packing and storing of produce, arising out of higher costs of machinery and equipment to perform these operations, would place Canadian producers at a competitive disadvantage in both the domestic and international markets.

The Council's representative said the companies and organizations which he represented tried to buy Canadian-made goods whenever possible. However, he indicated that a packing plant has little or no control over the origin of many types of machinery and equipment and even when orders were placed with Canadian manufacturers or their agents, imported goods were often delivered.

The spokesman for the Canadian Food Processors Association pointed out that goods entered under tariff item 40920-1 were exempt from sales tax while goods entered under tariff items 42701-1 and 42720-1 were not. In this connection, he submitted documents relating to various customs entries which indicated that when goods of a class or kind not made in Canada were entered under tariff item 42720-1 instead of under item 40920-1 the difference in laid-down cost, inclusive of sales tax, was about 19 per cent; for goods entered under tariff item 42701-1 (of a class or kind made in Canada), the difference was about 36 per cent.

Canadian manufacturers of various kinds of machinery and equipment were concerned with the potential effects on their activities of the proposed scope of existing item 40920-1. However, none of the companies which manufacture "grading and packing lines" in Canada made any recommendations to the Board. The manufacturers of fork lift trucks objected very strongly to the inclusion of these for duty-free entry; manufacturers of conveyors, weighing equipment, storage batteries and other equipment also objected to the proposed broadening of item 40920-1 to include their products.

Spokesmen for the manufacturers informed the Board that relative to U.S. companies, Canadian plants supplied only a small demand and therefore Canadian manufacturers were at a substantial disadvantage with respect to economies of scale. One of the spokesmen pointed out that the output of fork lift trucks by one plant in the U.S.A. was as great as the combined Canadian output. It was said that this situation also applied to other machines and equipment.

Manufacturers of fork lift trucks said that plants handling fresh fruit and fresh vegetables used large numbers of their machines and the loss of this market would make it even more difficult for them to compete with imported equipment because of the effect of such a loss on their output. They indicated that because of higher costs arising, at least partly, out of smaller runs, they could not compete in price against fork lift trucks made in the U.S.A., without the protection of the existing tariff.

The manufacturers of weighing machines, electrical equipment, storage batteries, conveyors and refrigeration equipment contended that they also were unable to meet foreign competition without tariff protection. They supported their opposition to the proposals of the Horticultural Council on much the same grounds as the manufacturers of fork lift trucks.

However, the manufacturers, for the most part, acknowledged that some pieces of machinery or equipment used in grading, packing, conveying and storing fresh fruit and fresh vegetables were not available from Canadian production and raised no objection to the retention of tariff item 40920-1 in its present form. They informed the Board that they would not oppose some broadening of the coverage of the existing tariff item if duty-free entry were restricted to goods of a class or kind not made in Canada.

Considerable discussion centred around the proposed inclusion of refrigeration and atmospheric conditioning equipment within the scope of a revised item. It was agreed that the complete systems,

as described by the spokesman for Atlantic Research Corporation, were not available from Canadian manufacturers. However, some of the goods used in the installation of such systems, for example, valves, pipes, connectors and measuring devices, are made in Canada.

The spokesman for Atlantic Research said that, in a new installation with a capacity of 30,000 to 100,000 bushels of apples, the cold storage facilities would cost about \$1.10 to \$1.20 per bushel of storage capacity. He also said that C.A. equipment of the kind his company manufactured, exclusive of duty, taxes and exchange, would cost 20 to 25 cents per bushel capacity and that its installation would cost 5 to 10 cents per bushel capacity. With the necessary structural changes, refrigerated C.A. storage would cost about \$2 per bushel.⁽¹⁾

The controlled storage conditions required in the case of potatoes for processing were outlined at the hearing. The conditions are apparently quite different from those in the case of C.A. storage of apples; principally they involve the control of humidity and temperature in the storage area. It was said that the use of such facilities in Canada was increasing rapidly.⁽²⁾

The Horticultural Council contended that the inclusion of refrigeration and C.A. equipment under tariff item 40920-1 was a natural extension of the item's scope, in the light of technological changes which had occurred in recent years. The Council's spokesman said that in order to meet competition in the domestic and foreign markets costs of essential machinery and equipment could not be higher to Canadian growers than to growers in other countries. He said:

"We cannot attain this position so long as we must pay 7½% to 22½% duty, and 11% sales tax on that machinery and equipment." (p. 172)

The Canadian Refrigeration and Air Conditioning Association (CRACA) strongly opposed the proposals of the Horticultural Council and its supporters on the grounds that the free entry of the goods in the proposed items would result in a substantial loss of the market for machinery and equipment manufactured in Canada by members of the Association. The spokesman for the Association said that, disregarding duty, Canadian prices of such equipment were comparable with those in the U.S.A. He also said that the existing Tariff made provision, at lower rates of duty, for refrigeration equipment which was not available from Canadian production. In view of this he urged that any expansion of existing item 40920-1 with respect to refrigeration and atmosphere conditioning equipment should relate only to goods of a class or kind not made in Canada.

The spokesman for CRACA informed the Board that membership in the Association included both manufacturers and importers and that if the equipment listed by the Horticultural Council were of a class or kind not made in Canada the Association's members would have no objection to its free entry. To illustrate the progress in Canadian

⁽¹⁾ Transcript, Vol. 3, p. 423

⁽²⁾ Same, Vol. 3, p. 434-5, 442

production facilities he stated that ten years ago two plants were built in Quebec and for each of them the cost of the refrigeration equipment was about \$60,000, all of which was imported; two years ago a generally similar installation was incorporated in another plant at a cost of \$50,000, all of the equipment being obtained from Canadian sources.⁽¹⁾

He also illustrated the importance of the proposed item to members of his Association by reference to a plant built in British Columbia in 1964. He said the total cost of this plant, exclusive of processing equipment, was \$560,000 of which the cost of refrigeration equipment, including its installation, was \$170,000 or 30 per cent. He noted that only \$23,500 of the \$170,000 consisted of imported materials.

In October 1966, there were 94 plants in Canada using refrigerated C.A. storage. There are, of course, a large number of plants which use only refrigerated storage.

The inclusion of fresh mushrooms in the coverage of the proposed items was not an issue of consequence at the hearings. The Department of National Revenue, in answer to a letter from the Board, wrote:

"In the administration of Tariff item 40920-1 it is noted that various dictionaries define mushrooms as edible fungus. Nevertheless, in view of the advice given by Dr. A.P. Chan, Department of Agriculture, and by others, the Department is prepared to accept machinery and equipment for mushrooms under a provision for machinery and equipment for fresh fruit or fresh vegetables." (Appendix III)

Because they are so easily bruised and damaged, fresh mushrooms are generally graded by hand without the use of mechanical equipment. According to the D.B.S., the total value of mushroom processing and packing equipment in use in Canada, in 1965, was less than \$398,000;⁽²⁾ most of this equipment would, presumably, be used in processing mushrooms rather than in packing them.

(1) Transcript, Vol. 2, p. 367

(2) D.B.S., Daily Bulletin, Nov. 11, 1966

SUMMARY AND CONCLUSIONS

This report deals primarily with the machinery and equipment used in grading and packaging fresh fruit and fresh vegetables. In addition, the report deals with the equipment used in controlled atmosphere storage and in cold storage and also some handling equipment, all for fresh fruit and fresh vegetables.

The marketing of fresh fruit and fresh vegetables has undergone many changes, particularly in the past twenty years. The practice of purchasing potatoes, carrots and other root vegetables in 90 or 100 lb. sacks, or apples by the barrel, and storing them in the cellar in the fall has virtually ceased. Today the housewife, at least in urban centres, visits her neighbourhood supermarket regularly; in most cases she purchases only a week's supply at a time.

The changes in marketing practices have fostered a number of innovations in the equipment used in the grading and packaging of fresh fruit and vegetables. In a modern grading and packing line, which may cost more than one hundred thousand dollars, the produce is carefully washed, sorted and sized and the final product is an attractive package, of a convenient size, containing produce, uniform in quality and size, relatively clean and free of extraneous matter. In the case of apples, for example, such a line would include a feed table, an immersion dumper, a leaf eliminator, a small apple eliminator, a washer, a wiper or drier, sorting tables, sizers, revolving packing tables for hand packing cartons or baskets, a combination bagging and weighing machine for filling plastic bags, and finally a closing or lidding machine.

The Canadian Horticultural Council was the chief spokesman for the growers and packers. The Council contended that, while at one time all the pieces of machinery making up a grading and packing line were classified under tariff item 40920-7 or its predecessors, in recent years a narrower interpretation has been placed on the words grading machines; the result has been that some of the units in a grading line, particularly the newer type of units, introduced in recent years, are not permitted entry under the item. Within the past year the Board has heard three appeals arising out of such circumstances. To remedy this situation the Council proposed that the item be re-worded to make it clear that all units or pieces of machinery and equipment forming part of a grading and packing line are included in the item.

The final version of the wording proposed by the Council would provide duty free entry for all machinery, apparatus and equipment for "dumping, cleaning, grading, marking, branding, labelling, packaging, weighing, lidding or closing, waxing, treating, drying fresh fruits and fresh vegetables" as well as that for conveying or forwarding between these operations, and for stacking and destacking, loading or unloading.

The Council also proposed an item to provide duty-free entry for machinery, equipment and apparatus used in cooling, heating, or cold storing fresh fruit or fresh vegetables. The proposed item was intended to include the equipment and apparatus used in controlled atmosphere storage.

There is some manufacturing of machinery for grading and packaging in Canada; however, there were no strong objections to the continued duty-free entry of machinery for grading and packing. Canadian manufacturers seemed more interested in securing duty-free entry for such machinery and equipment into the U.S. market; there are some exports of Canadian grading machinery and it was felt that these could be expanded if the U.S. tariff were removed.

On the other hand, several associations and individual manufacturers raised strong objection to the revised wording proposed by the Council to the extent that it would encompass machinery and equipment not now covered by the item and not directly forming part of the grading and packing line. It was pointed out that the revised wording would include lift trucks which are now specifically excluded from the item, as well as power transporters and other material handling equipment. The spokesman for the Canadian Refrigeration and Air Conditioning Association pointed out that the equipment used in cold storage plants was basically the same whether the storage was to hold fresh fruit and fresh vegetables or any other product. He pointed out that much of the business of members of the Association consisted of installing refrigeration and cooling equipment in cold storage facilities of all kinds. However, the same spokesman stated that to the best of his knowledge carbon dioxide generating or reducing apparatus used in conjunction with controlled atmosphere storage was not made in Canada and his Association had no objection to such equipment entering Canada on a duty-free basis, as long as it is not made in this country.

The Board is of the opinion that most grading and packing machinery and equipment required by growers and packers is of special design and peculiar to that industry, and required in such limited quantities that production in Canada, other than to serve regional markets, is unlikely to be economically feasible. The Board is therefore recommending the introduction of a new item to provide duty-free entry for machinery and equipment forming part of a grading and packing line, other than scales, from the feed table, bin or hopper, to the lidding or closing machine. There are several Canadian producers of scales and the Board is satisfied that, for the most part, the scales required by packing plants are readily available from Canadian suppliers.

The Board is not recommending the inclusion of ancillary equipment such as fork lift trucks and refrigeration equipment which are commonly used by a large number of industries and which, for the most part, are available from Canadian producers.

The Board is recommending a new item to provide duty-free entry for apparatus used in generating carbon dioxide or reducing the carbon dioxide content in the controlled atmosphere storage of fresh fruit and fresh vegetables or for controlling the atmosphere in greenhouses.

The question as to whether or not mushrooms were covered by the phrase "fresh vegetables" was raised with the Board prior to the second hearing. The Board was advised by the administrative authorities that they would accept machinery and equipment for mushrooms under a provision for machinery for fresh fruit and fresh vegetables. The Board's correspondence exchanged with the Department of National Revenue in this connection is reproduced in Appendix III of this report.

It seems to the Board that in this context the words fresh vegetables would include any product commonly used as a vegetable even though it may not be a vegetable in the botanical sense, for example, tomatoes and cucumbers.

RECOMMENDED SCHEDULE

1. That tariff item 40920-1, and the enumeration of goods and the rates of duty set opposite that item be struck out and that the following items, enumerations of goods and rates of duty be inserted in the Customs Tariff:

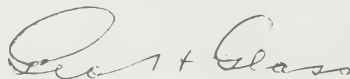
Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
I	Combination bagging or boxing and weighing machines; box dumpers, box or bag fillers, highpilars not including fork lift trucks; grading, grating, washing or wiping machines; machines for making or lidding boxes; all the foregoing for fresh fruit or fresh vegetables; parts of all the foregoing	Free	Free	35 p.c.
II	Machines for topping vegetables; machines for bunching or tying cut flowers, vegetables or nursery stock; parts of all the foregoing	Free	Free	35 p.c.
III	Machinery and equipment, other than scales, for use in grading or packing lines exclusively for fresh fruit or fresh vegetables, from the dumper, feed table, bin or hopper to the box or bag closing machine, inclusive; parts of all the foregoing	Free	Free	35 p.c.
IV	Carbon dioxide generators or reducers for use in controlling the atmosphere in greenhouses or in storage plants for fresh fruit or fresh vegetables; parts of all the foregoing	Free	Free	35 p.c.

2. That provision for

Egg-graders and egg-cleaners;
and
Silage caps;

be made in tariff item 40924-1 after the phrase:

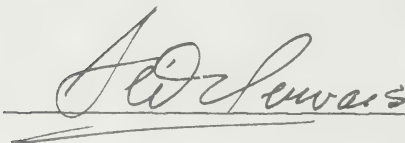
"All the foregoing for use on the farm for farm purposes only;"



First Vice-Chairman



Second Vice-Chairman



Member

Ottawa, November 15, 1966.

NOTES ON RECOMMENDED ITEMS

relating to machinery and equipment for fresh fruit and fresh vegetables

Recommended Item I

Combination bagging or boxing and weighing machines; box dumpers, box or bag fillers, highpilers not including fork lift trucks; grading, grating, washing or wiping machines; machines for making or lidding boxes; all the foregoing for fresh fruit or fresh vegetables; parts of all the foregoing

Free

Free

35 p.c.

Recommended Item II

Machines for topping vegetables; machines for bunching or tying cut flowers, vegetables or nursery stock; parts of all the foregoing

Free

Free

35 p.c.

Recommended Items I and II are parts of existing item 40920-1 without any significant change in wording or in rates of duty except that the rate recommended under the General Tariff is 35 p.c. - the same as the statutory rate on machinery in the 42700 series of tariff items. The purpose of these two recommended items is to break down the existing item into separate items each covering goods which relate to one another or to a particular function. See also notes on Recommended Item III.

There were no proposals received respecting grating machines and little interest expressed in them; in these circumstances and because the item is bound under GATT, the Board does not recommend any change.

Recommended Item III

Machinery and equipment, other than scales, for use in grading or packing lines exclusively for fresh fruit or fresh vegetables, from the dumper, feed table, bin or hopper to the box or bag closing machine, inclusive; parts of all the foregoing

Free

Free

35 p.c.

This item is intended to encompass all the machinery and equipment, other than scales, in grading or packing lines to be used exclusively for fresh fruit or fresh vegetables.

Much of the equipment in modern grading or packing lines is designed or produced solely for such use. There is some grading equipment produced in Ontario and New Brunswick, largely for regional markets. In the Board's view the volume of this special equipment required by the Canadian market is such that its production in Canada aside from production to serve local markets, is not economically

feasible. The Board concurs with the view expressed by several Canadian producers of such equipment who considered that their interests would be better served by the elimination of the United States tariff on such equipment than by the imposition of a tariff on imports of such equipment into Canada.

There are several manufacturers of scales in Canada and of equipment which automatically weighs, computes the package price and prints the label. They urged that the protection now accorded to their products remain in effect; the Board considers that these Canadian producers can satisfy the requirements of grading and packing lines as far as scales are concerned. While the Board is recommending the continuation of the existing duty-free provision for combination bagging or boxing and weighing machines in Recommended Item I, it is recommending that scales be excluded from the coverage of Recommended Item III.

Recommended Item III is intended to cover only equipment used in grading or packing lines which are used to grade or pack fresh fruit or fresh vegetables only. Equipment used for other products in addition to fresh fruit or fresh vegetables would not fall under the Recommended Item, i.e., equipment used by a wholesale food distributor or a chain store to package fresh fruit or fresh vegetables and also to package meat or other products would not qualify for entry under the Recommended Item since such equipment would not be used exclusively for fresh fruit or fresh vegetables.

Recommended Item III does not encompass machinery used by canneries, food processing plants and others who may not be considered to be operating "grading or packing lines"; however, Recommended Item I would encompass such machinery to the same extent as does existing item 40920-1, with continued duty-free entry under both the British Preferential and Most-Favoured-Nation Tariffs.

Recommended Item IV

Carbon dioxide generators or reducers for use in controlling the atmosphere in greenhouses or in storage plants for fresh fruit or fresh vegetables; parts of all the foregoing

Free

Free

35 p.c.

This is a new item to provide duty-free entry for apparatus used to generate carbon dioxide and to reduce the carbon dioxide content in greenhouses and controlled atmosphere storage.

In controlled atmosphere or "C.A." storage, the atmosphere is principally nitrogen -- about 95 per cent -- with 2 to 3 per cent oxygen and $1\frac{1}{2}$ to 2 per cent carbon dioxide. The marketable life of fresh fruit or fresh vegetables kept in such an atmosphere in a high-humidity cold storage is greatly extended.

In the early C.A. storage plants the respiration of the products reduced the oxygen content and increased the carbon dioxide content; however, in modern C.A. storage plants the storage

atmosphere is circulated through a burner which quickly reduces the oxygen content of the atmosphere. Any excess carbon dioxide produced by the respiration of the produce is removed by circulating the atmosphere through a "scrubber" -- a carbon dioxide reducing apparatus.

Thus, the carbon dioxide generating and reducing apparatus quickly creates the desirable atmosphere in the storage; such equipment also makes it possible to withdraw some of the produce for marketing, reseal the storage area and quickly restore the C.A. conditions.

The same equipment is also used to some extent to control the growth of nursery stock in greenhouses and provision for this use is also made in the recommended item.

There are now ninety-four C.A. storage plants in Canada and some greenhouses equipped with C.A. apparatus. While the number is increasing it is not considered that the demand for the generating and reducing apparatus would warrant the encouragement of its production in Canada. The Board is therefore recommending this duty-free item to cover such equipment. However, the piping, ducts and valves used with the apparatus are standard products available from many producers and the Recommended Item does not include them.

NOTES ON EXISTING ITEM

relating to machinery and equipment for fresh fruit and fresh vegetables

Existing Item 40920-1

40920-1 Combination bagging or boxing and weighing machines, and grading, grating, washing and wiping machines for fresh fruit or fresh vegetables; highpilers not including fork lift trucks, box dumpers, box or bag fillers, all for use in packing and storing fresh fruit or fresh vegetables; machines for making or lidding boxes for fruit or vegetables; machines for topping vegetables; machines for bunching or tying cut flowers, vegetables or nursery stock; egg-graders and egg-cleaners; silage caps; parts of the foregoing

Free

Free

Free

With the deletion of this item all the goods now provided for in it would fall under the Board's recommended items with the exception of "egg-graders and egg-cleaners; silage caps;". In the second part of its Recommended Schedule the Board suggests that provision for these goods be made in tariff item 40924-1.

The only significant change is contained in Recommended Item III. This item provides for all machinery and equipment other than scales for use in grading or packing lines exclusively for fresh fruit or fresh vegetables. Otherwise the provisions of the existing item would be replaced by Recommended Items I and II.

The existing item covers a mixture of goods and Recommended Items I and II are intended to segregate those goods closely related to one another or to a particular function.

The Board is recommending that the rate under the General Tariff be 35 p.c., as it is in the 42700 series of tariff items covering machinery. Having in mind those infrequent circumstances when the General Tariff rate is of some significance, it seems desirable that it should be greater than the rate under the Most-Favoured-Nation Tariff.

APPENDIX ISTATISTICSTable

- 1 Farm value of commercial production of fruit and vegetables, by region, 1957-65
- 2 Farm value of commercial production of principal fruits and vegetables, 1957-65
- 3 Farm value of commercial production of apples and potatoes, by region, 1957-65
- 4 Farm value of production of mushrooms, by province, 1957-65
- 5 Controlled atmosphere storage plants and capacity, by province, at October 1966
- 6 Apples in cold storage and wholesale warehouses, selected provinces, by months, November 1964 to June 1966
- 7 Purchases of equipment by 49 grading and packing plants, 1963-65
- 8 Distribution of purchases of equipment by 49 grading and packing plants, by function, 1963-65
- 9 Cost of operating an apple packing line, New York State, 1958

Table 1

Farm Value of Commercial Production of Fruit and Vegetables
by Region, 1957-65

	Atlantic Provinces	Quebec	Ontario	Prairie Provinces	British Columbia	Canada
	- thousand dollars -					
<u>Fruit</u>						
1957	4,176	4,995	18,430	-	15,492	43,093
1958	3,260	6,475	21,111	-	13,299	44,145
1959	3,860	6,924	19,132	-	13,576	43,492
1960	4,874	6,930	24,150	-	17,877	53,831
1961	6,194	5,769	24,088	-	17,641	53,692
1962	5,334	9,709	22,752	-	21,186	58,981
1963	5,904	11,009	27,195	-	23,170	67,278
1964	5,893	11,023	31,990	-	25,048	73,954
1965(a)	8,005	9,351	28,421	-	18,602	64,379
<u>Vegetables</u> (b)						
	- thousand dollars -					
1957	29,009	33,127	47,952	11,541	12,939	134,568
1958	24,578	31,734	46,711	9,770	10,030	122,823
1959	39,827	34,506	55,964	10,789	11,467	152,553
1960	27,206	33,818	58,050	12,163	11,744	142,931
1961	19,251	27,293	52,534	10,446	11,250	120,774
1962	27,987	28,341	60,040	12,782	9,973	139,123
1963	32,439	29,330	57,278	13,510	10,106	142,663
1964(a)	63,067	35,306	70,068	25,583	12,709	206,733
1965	..	..	..	..	..	..
<u>Fruit and Vegetables</u> (b)						
	- thousand dollars -					
1957	33,185	38,122	66,382	11,541	28,431	177,661
1958	27,838	38,209	67,822	9,770	23,329	166,968
1959	43,687	41,430	75,096	10,789	25,043	196,046
1960	32,080	40,748	82,200	12,163	29,621	196,762
1961	31,639	33,062	76,622	10,446	28,891	174,466
1962	33,321	38,050	82,792	12,782	31,159	198,104
1963	38,343	40,339	84,473	13,510	33,276	209,941
1964(a)	68,960	46,329	102,058	25,583	37,757	280,687
1965	..	..	..	..	..	..

(a) Preliminary

(b) Includes potatoes; excludes mushrooms

Source: D.B.S. Value of Fruit Production: Acreage and Production of Commercial Vegetables, Cat. No. 22-003; Field Crop Handbooks, Cat. No. 21-507

Farm Value of Commercial Production of Principal
Fruits and Vegetables, 1957-65

Table 2

	<u>Apples</u>	<u>Peaches</u>	<u>Straw- berries</u>	<u>Cherries</u> - thousand dollars -	<u>Pears</u> - thousand dollars -	<u>Rasp- berries</u>	<u>Blue- berries</u>	<u>Plums & Prunes</u>	<u>Apricots</u>
1957	18,035	6,218	3,675	3,606	2,201	3,008	1,888	946	523
1958	14,729	5,761	5,264	3,736	2,986	2,655	2,365	1,194	443
1959	17,294	5,444	4,711	2,523	2,269	2,781	2,710	1,024	464
1960	23,147	6,137	5,734	3,219	3,344	3,125	2,383	970	674
1961	23,077	6,674	5,291	4,710	3,101	2,534	1,823	1,257	626
1962	28,056	5,784	6,080	3,951	3,471	3,129	1,821	1,031	714
1963	31,028	6,933	5,860	4,859	3,999	3,906	2,795	1,434	327
1964	31,598	8,128	7,939	6,606	3,942	3,854	3,603	1,171	754
1965 (a)	31,007	5,532	5,867	3,639	2,661	4,173	4,452	1,209	13
	<u>Potatoes (b)</u>	<u>Tomatoes</u>	<u>Carrots</u>	<u>Corn</u> - thousand dollars -	<u>Onions</u> - thousand dollars -	<u>Turnips</u>	<u>Lettuce</u>	<u>Cabbage</u>	<u>Cucumbers</u>
1957	75,675	..	..	..	..	..	..	..	..
1958	68,221	18,480	5,333	5,659	3,784	..	3,509	3,403	..
1959	98,317	16,416	5,489	5,693	3,630	2,999	2,943	2,508	2,128
1960	85,023	18,803	6,227	5,704	3,900	2,981	2,640	2,517	2,271
1961	61,933	17,943	5,816	6,432	5,739	3,473	2,171	2,620	2,616
1962	73,118	19,271	7,332	6,871	6,254	3,571	2,653	2,478	2,083
1963	78,609	17,088	7,548	5,935	5,768	3,582	2,746	3,044	2,769
1964 (a)	138,490	18,826	7,163	6,860	5,535	3,771	2,744	2,744	3,457
1965 (a)	..	21,546	4,934	6,970	5,164	3,717	2,566	3,359	2,646

(a) Preliminary

(b) Crop years beginning July 1 of year shown; value pertains to total production

Source: D.B.S., Value of Fruit Production; Acreage and Production of Commercial Vegetables, Cat. No. 22-003

D.B.S., Handbook of Agricultural Statistics, Cat. No. 21-507

Farm Value of Commercial Production of Apples and Potatoes, by Region, 1957-65

Table 3

Apples	Atlantic Provinces		Quebec		Ontario		Prairie Provinces		British Columbia		Canada	
	thousand bushels		thousand bushels		thousand bushels		thousand bushels		thousand bushels		thousand bushels	
1957	3,368	2,525	3,221	6,516	15,630	2,444	3,358	4,124	8,109	18,035		
1958	1,805	4,465	4,720	6,016	17,006	1,372	3,527	3,937	5,893	14,729		
1959	2,760	3,980	4,603	4,174	15,517	1,996	4,179	4,942	6,177	17,294		
1960	2,643	3,130	3,761	5,380	14,914	2,319	4,288	7,017	9,523	23,147		
1961	3,676	3,055	5,511	4,279	16,521	3,566	4,094	6,304	9,113	23,077		
1962	2,961	5,985	5,098	6,051	20,095	3,075	7,397	6,770	10,814	28,056		
1963	3,655	5,298	5,452	8,631	23,036	3,160	8,062	7,947	11,859	31,028		
1964	2,855	3,765	6,522	6,902	20,044	2,997	7,304	10,264	11,033	31,598		
1965(a)	3,550	7,733	5,383	5,626	22,292	3,654	7,106	8,350	11,897	31,007		

Potatoes (b)

Potatoes	Atlantic Provinces		Quebec		Ontario		Prairie Provinces		British Columbia		Canada	
	thousand bushels		thousand bushels		thousand bushels		thousand bushels		thousand bushels		thousand bushels	
1957	33,247	19,018	11,880	3,457	72,907	26,844	21,339	12,118	6,326	75,675		
1958	29,073	15,248	12,690	3,163	66,017	22,412	18,115	15,000	5,257	68,221		
1959	25,087	13,133	11,750	3,733	59,357	37,833	21,749	23,476	6,832	98,317		
1960	28,088	16,555	14,892	3,725	71,160	25,425	21,257	21,623	7,130	85,023		
1961	31,397	15,860	16,365	3,777	73,513	17,708	14,750	15,383	5,824	61,933		
1962	31,807	16,015	15,968	3,333	77,785	25,897	14,606	18,204	4,920	73,118		
1963	33,547	13,940	16,320	2,867	76,348	29,409	15,473	19,584	4,300	78,609		
1964	34,912	13,680	17,490	2,992	79,555	60,117(a)	20,520(a)	28,374(a)	7,539	138,490(a)		
1965(a)	29,873	12,065	17,640	3,500	74,862	..	..	..	..	..

(a) Preliminary

(b) Crop years beginning July 1 of year shown; for potatoes, data relate to total production

Source: D.B.S., Value of Fruit Production, Cat. No. 22-003, and Field Crop Handbook, Cat. No. 21-507

Table 4

Farm Value of Production of Mushrooms,
by Province, 1957-65

	<u>Atlantic Provinces & Quebec</u>	<u>Ontario</u>	<u>Prairie Provinces \$'000</u>	<u>British Columbia</u>	<u>Total</u>
1957	..	2,921	..	733	3,654
1958	..	2,957	..	759	3,716
1959	..	2,924	..	774	3,698
1960	..	2,776	..	820	3,596
1961	..	2,388	..	792	3,180
1962	..	2,378	..	921	3,299
1963	..	2,650	..	999	3,649
1964	2,697	3,133	371	1,188	7,389
1965	6,213 ^(a)		435	1,229	7,877

(a) Atlantic Provinces, Quebec and Ontario

Source: Dominion Bureau of Statistics

Table 5

Numbers and Capacity of Controlled Atmosphere Storage Plants
by Province, October 1966

<u>Size of Plant in '000 bu.</u>	<u>Nova Scotia</u>	<u>New Brunswick</u>	<u>Quebec</u>	<u>Ontario</u>	<u>British Columbia</u>	<u>Canada</u>
			no. of plants			
less than 20	12	-	20	24	-	56
21 to 50	-	1	8	9	2	20
51 to 100	1	-	4	6	1	12
101 to 150	-	-	2	-	2	4
151 and over	-	-	1	-	1	2
Total	13	1	35	39	6	94

capacity in '000 bu.

less than 20	85	-	246	313	-	644
21-50	-	45	257	317	90	709
51-100	77	-	261	395	88	821
101-150	-	-	280	-	264	544
151 and over	-	-	180	-	288	468
Total	162	45	1,224	1,025	730	3,186

Source: Canada Dept. of Agriculture, List of Controlled Atmosphere Cold Storages for Apples in Canada, October, 1966

Table 6

Apples in Cold Storage and Wholesale Warehouses, Selected
Provinces, by Months^(a), November 1964 to June 1966

	<u>Nova Scotia</u>	<u>Quebec</u>	<u>Ontario</u>	<u>British Columbia</u>	<u>Canada</u>
		-	thousand bushels	-	
<u>1964</u>					
Nov.	975	1,745	3,430	4,656	11,174
Dec.	777	1,406	2,799	3,838	9,136
<u>1965</u>					
Jan.	444	1,169	2,127	2,787	6,773
Feb.	252	964	1,675	1,607	4,673
Mar.	114	715	1,262	932	3,141
Apr.	63	437	875	524	1,979
May	36	257	543	264	1,151
June	23	133	290	134	627
July)					
Aug.)					
Sept.)					
Oct.)					
		data not collected ^(b)			
Nov.	1,225	3,237	3,212	3,639	11,785
Dec.	941	2,849	2,814	2,705	9,722
<u>1966</u>					
Jan.	604	2,218	2,407	1,822	7,334
Feb.	300	1,578	1,889	977	4,941
Mar.	140	1,324	1,489	577	3,667
Apr.	70	868	1,104	282	2,415
May	16	515	731	108	1,440
June	5	243	397	23	703

(a) As of first business day of each month

(b) Cold storage statistics for apples are collected only from
November to June

Source: D.B.S., Fruit in Cold Storage and Wholesale Warehouses in
Canada, Cat. No. 32-010

Table 7

Purchases of Equipment by 49 Grading
and Packing Plants, 1963-65

<u>Function</u>	<u>Domestic</u>	<u>Imported</u>	<u>Total</u>	<u>Per Cent Imported</u>
	<u>!000 dollars</u>			
Dumping	15.7	58.1	73.9	79
Cleaning, washing & drying	30.8	38.6	69.4	56
Sizing	5.3	22.9	28.2	81
Filling and weighing	21.5	72.9	94.4	77
Package closing	14.6	16.5	31.1	53
Conveying	38.6	57.9	96.5	60
Complete grading lines	-	<u>194.8</u>	<u>194.8</u>	<u>100</u>
Total grading & packing	<u>126.5</u>	<u>461.7</u>	<u>588.3</u>	<u>79</u>
Regrigeration and storage	316.7	145.8	462.5	32
Transporting	<u>186.2</u>	<u>104.7</u>	<u>290.9</u>	<u>36</u>
Total all equipment	<u>629.4</u>	<u>712.3</u>	<u>1,341.7</u>	<u>53</u>

Source: Tariff Board survey

Table 8

Distribution of Purchases of Equipment by 49 Grading
and Packing Plants, by Function, 1963-65

<u>Function</u>	<u>Domestic</u>	<u>Imported</u>	<u>Total</u>
	<u>per cent of purchases</u>		
Dumping	12.4	12.6	12.6
Cleaning, washing & drying	24.3	8.4	11.8
Sizing	4.2	5.0	4.8
Filling and weighing	17.0	15.8	16.0
Package closing	11.6	3.6	5.3
Conveying	30.5	12.5	16.4
Complete grading lines	-	<u>42.1</u>	<u>33.1</u>
Total grading & packing	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Grading and packing	20.1	64.8	43.8
Refrigeration and storage	50.3	20.5	34.5
Transporting	<u>29.6</u>	<u>14.7</u>	<u>21.7</u>
Total all purchases	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: Tariff Board survey

Table 9

Cost of Operating an Apple Packing Line,
New York State, 1958

<u>Equipment</u>	<u>Number Used No.</u>	<u>Installed Cost Per Unit</u>	<u>Total Installed Cost - \$U.S. -</u>	<u>Annual Cost of Ownership and Operation (a)</u>
Friction chain conveyor	1	170	170	31.86
Drum dumper	1	1,690	1,690	268.99
Empty box conveyor	1	95	95	13.71
Spreader belt after dumper	1	425	425	74.47
Leaf eliminator	1	530	530	84.09
Sorting table (including cull chutes & belt)	1	2,580	2,580	407.30
Brusher	1	715	715	115.54
Spreader belt after brusher	1	515	515	87.45
24" dimension sizer with take-away belts	1	5,400	5,400	849.20
35' distributor belt	1	1,650	1,650	265.01
Chain eliminator with take-away belts	1	450	450	78.08
41' return-flow belt	1	3,340	3,340	523.64
Packing stand	6	45	270	35.76
Power shunt	7	225	1,575	263.73
Cull elevator	1	95	95	18.38
Utility grade conveyor & chain sizers	1	1,120	1,120	187.50
Automatic box fillers	4	585	2,340	454.95
Utility grade return belt	1	640	640	106.66
46' filled box conveyor	1	540	540	98.55
Total Cost			24,140	3,964.87

(a) Costs include depreciation, interest, insurance and taxes, power and maintenance; depreciation is based on expected life of 12 years. Based on operation of the line at an annual rate of 50,000 boxes (42,200 Canadian bushels) per year. The line was operated at 900 U.S. boxes per day (760 Canadian bu. per day) for 450 hrs. (56½ days) per year.

Source: U.S.D.A., An Experimental Packing Line for McIntosh Apples, A.M.S. No. 330, Washington, D.C., U.S.A.

APPENDIX II

TARIFF HISTORY

Tariff HistoryTariff Item 40920-1 (GATT) - Previously 409e(2)

Combination bagging or boxing and weighing machines, and grading, grating, washing and wiping machines for fresh fruit or fresh vegetables; highpilers not including fork lift trucks, box dumpers, box or bag fillers, all for use in packing and storing fresh fruit or fresh vegetables; machines for making or lidding boxes for fruit or vegetables; machines for topping vegetables; machines for bunching or tying cut flowers, vegetables or nursery stock; egg-graders and egg-cleaners; silage caps; parts of the foregoing

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1957, March 15	Free	Free	Free

Prior to March 15, 1957 the item did not include combination boxing and weighing machines, highpilers not including fork lift trucks, box dumpers, box or bag fillers, for use in packing and storing fresh fruit or fresh vegetables. These goods were classified under tariff item 427a, Free under the British Preferential Tariff and at $7\frac{1}{2}$ p.c. under the Most-Favoured-Nation Tariff, when of a class or kind not made in Canada and under item 427 at 10 p.c. under the British Preferential Tariff and $22\frac{1}{2}$ p.c. under the Most-Favoured-Nation Tariff, when of a class or kind made in Canada.

1955, April 6	Free	Free	Free
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Prior to April 6, 1955 the item was as follows:
Fruit and vegetable grading, grating, washing and wiping machines; combination bagging and weighing machines; machines for topping vegetables; machines for bunching and/or tying cut flowers, vegetables and nursery stock; machines for making or lidding boxes for fruit or vegetables; egg-graders and egg-cleaners; silage caps; parts of the foregoing

1953, February 20	Free	Free	Free
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Prior to February 20, 1953 the item was numbered 409e(ii) and was as follows:
Fruit and vegetable grading, grating, washing and wiping machines and combination bagging and weighing machines, and complete parts thereof; machines for topping vegetables, and machines for bunching and/or tying cut flowers, vegetables and nursery stock, and complete parts thereof; machines and complete parts thereof for making or lidding boxes for fruit or vegetables; egg-graders and egg-cleaners, and complete parts thereof, not including aluminum parts

Silage caps were classified according to their nature or composition.

1948, January 1 (GATT)		Free	
1944, June 27	Free	Free	Free
1941, April 30	Free	5 p.c.	10 p.c.

Prior to April 30, 1941 the item did not include machines for making boxes for fruit or vegetables. These goods were classified under tariff item 427a, Free under the British Preferential Tariff and at 27½ p.c. under the Most-Favoured-Nation Tariff.

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1939, April 26	Free	5 p.c.	10 p.c.

Prior to April 26, 1939 the item did not include fruit and vegetable grating machines or box-lidding machines. These goods were classified under tariff item 427a, Free under the British Preferential Tariff and at 27½ p.c. under the Most-Favoured-Nation Tariff.

1939, January 1 (United States Trade Agreement)		5 p.c.	
1937, February 26	Free	5 p.c.	10 p.c.

Prior to February 26, 1937 the item did not include egg-cleaners. They were classified under tariff item 427a, Free under the British Preferential Tariff and at 27½ p.c. under the Most-Favoured-Nation Tariff.

1936, May 2	Free	5 p.c.	10 p.c.
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Prior to May 2, 1936 the item was as follows:
Fruit and vegetable grading, washing and wiping machines and combination bagging and weighing machines, and complete parts thereof

Machines for topping vegetables and machines for bunching and/or tying cut flowers, vegetables and nursery stock were classified under tariff item 408f, Free under the British Preferential Tariff and at 15 p.c. under the Most-Favoured-Nation Tariff. Egg graders were classified under item 461 at rates of 10 p.c. under the British Preferential Tariff and 30 p.c. under the Most-Favoured-Nation Tariff.

1934, April 19	Free	10 p.c.	10 p.c.
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Prior to April 19, 1934 the item did not provide for combination bagging and weighing machines. These goods were classified under tariff item 427 at rates of 15 p.c. under the British Preferential Tariff and 27½ p.c. under the Most-Favoured-Nation Tariff.

1931, June 2	Free	10 p.c.	10 p.c.
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Prior to June 2, 1931 tariff items 409e(i) and 409e(ii) were brought together as item 409e. The item was as follows:
Spraying and dusting machines and attachments therefor, including hand sprayers; fruit and vegetable grading machines and attachments therefor; apparatus specially designed for sterilizing bulbs; pressure testing apparatus for determining maturity of fruit, pruning hooks; pruning shears; and complete parts of all the foregoing

Fruit and vegetable washing and wiping machines were classified under tariff item 427a at rates of 15 p.c. under the British Preferential Tariff and 25 p.c. under the Most-Favoured-Nation Tariff.

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1930, September 17	Free	15 p.c.	25 p.c.

Prior to September 17, 1930 the item was as follows:
 Spraying and dusting machines and attachments therefor, including hand sprayers, for farm purposes only; fruit or vegetable grading machines and attachments therefor; apparatus specially designed for sterilizing bulbs; pressure testing apparatus for determining maturity of fruit; pruning hooks; pruning shears; and complete parts of all the foregoing

1930, May 2	Free	10 p.c.	10 p.c.
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Prior to May 2, 1930 fruit and vegetable grading machines were classified under tariff item 448 which was as follows:
 Spraying machines, fruit or vegetable grading machines, apparatus specially designed for sterilizing bulbs, pressure testing apparatus for determining maturity of fruit, incubators for hatching eggs, brooders for rearing young fowl, pruning hooks, pruning shears, hay loaders, potato diggers, fodder or feed cutters, grain crushers, fanning mills, hay tedders, farm or field rollers, post hole diggers, snaths, milking machines, milking machine attachments; centrifugal machines for testing butter fat, milk or cream; pasteurizers for dairying purposes; equipment for generating electric power for farm purposes only, viz: engine, generator, storage battery and switch board; stumping machines, and other agricultural implements, n.o.p.; and complete parts of articles specified in this tariff item

Attachments for fruit or vegetable grading machines were classified according to their nature or composition.

1929, March 2	5 p.c.	10 p.c.	10 p.c.
---------------	--------	---------	---------

Prior to March 2, 1929 item 448 was as follows:
 Spraying machines, fruit or vegetable grading machines, incubators for hatching eggs, brooders for rearing young fowl, pruning hooks, pruning shears, hay loaders, potato-diggers, fodder or feed cutters, grain crushers, fanning mills, hay tedders, farm or field rollers, post hole diggers, snaths, milking machines, milking machine attachments; centrifugal machines for testing butter fat, milk or cream; pasteurizers for dairying purposes; equipment for generating electric power for farm purposes only, viz: engine, generator, storage battery and switch board; stumping machines, and other agricultural implements, n.o.p.; and complete parts of articles specified in this tariff item

1926, April 16	5 p.c.	10 p.c.	10 p.c.
----------------	--------	---------	---------

Prior to April 16, 1926 item 448 was as follows:
 Spraying machines, fruit or vegetable grading machines, incubators for hatching eggs, brooders for rearing young fowl, pruning hooks, pruning shears, hay loaders, potato-diggers, fodder or feed cutters, grain crushers, fanning mills, hay tedders, farm or field rollers, post hole diggers, snaths, milking machines, milking machine attachments; centrifugal machines for testing butter fat, milk or cream; stumping machines, and other agricultural implements, n.o.p., and complete parts of articles specified in this tariff item

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1924, April 11	5 p.c.	10 p.c.	10 p.c.

Prior to April 11, 1924 item 448 was as follows:

Fruit or vegetable grading machines, incubators for hatching eggs, brooders for rearing young fowl, pruning hooks, pruning shears, hay loaders, potato-diggers, fodder or feed cutters, grain crushers, fanning mills, hay tedders, farm or field rollers, post hole diggers, snaths, and other agricultural implements, n.o.p., and complete parts of articles specified in this tariff item

1922, May 24	10 p.c.	15 p.c.	15 p.c.
--------------	---------	---------	---------

Prior to May 24, 1922 fruit and vegetable grading machines were classified under tariff item 453 as machinery composed wholly or in part of iron or steel at the rates of 15 p.c. under the British Preferential Tariff and 25 p.c. under the Most-Favoured-Nation Tariff.

Note: The parts of an item relevant to existing tariff item 40920-1, are underlined.

APPENDIX III

CORRESPONDENCE RE

FRESH MUSHROOMS

THE TARIFF BOARD
LA COMMISSION DU TARIF

Ottawa 4, Ontario
April 1, 1966

Mr. R.C. Labarge,
Deputy Minister of National Revenue,
Customs and Excise Division,
Ottawa 2, Ontario

Dear Mr. Labarge:

In the context of our Reference 137 covering machinery and equipment used for fresh fruits or fresh vegetables the matter of mushrooms has come up.

We have been requested in any item we should recommend to replace tariff item 40920-1 that we should use the phrase "fresh fruits, or fresh vegetables, including mushrooms."

This suggestion does not appeal to me very much. In the first place I do not know how many other items in the tariff or in other legislation might be involved. However, more important it seems to me that where the word vegetable appears in the context where it refers to products which are used as mushrooms are used then it would be logical to include mushrooms within the meaning of the word vegetable.

In this connection I attach a copy of a letter from Dr. A.P. Chan addressed to Mr. King of the Canadian Horticultural Council, which Mr. King has passed along to me. You will note that Dr. Chan points out that there are products which, in the botanical sense, are not vegetables but are used as vegetables and have been known as vegetables, and he feels that it would be logical to consider mushrooms as vegetables.

I would appreciate your advice as to whether an item providing for "machinery and equipment for fresh fruits or fresh vegetables" would be interpreted as including such machinery and equipment, for mushrooms.

Yours sincerely,

Geo. H. Glass,
First Vice-Chairman

Encl.

CANADA DEPARTMENT OF AGRICULTURE
RESEARCH BRANCH
PLANT RESEARCH INSTITUTE
CENTRAL EXPERIMENTAL FARM

Ottawa, Canada
December 30, 1965.

Mr. John King,
Assistant Secretary,
Canadian Horticultural Council,
219 Queen Street,
Ottawa, Ontario.

Dear Mr. King:

Further to your request for a classification of the cultivated mushroom, we can only offer the following statement:

In general, conventional botanists regard fungi as lower forms of plant life and as such belong to the Plant Kingdom. Since the mushroom is an edible fungus and is used as a vegetable, there are a number of precedents which would permit interpretation on the basis of useage. Examples are tomato, cucumber, squash etc which are fruits in the botanical sense but since they are used as vegetables the general public accepts them and knows them as vegetables. We therefore feel that there is no other logical classification for mushrooms other than as a vegetable.

I trust that this statement will be helpful to you.

Yours sincerely,

A.P. Chan,
Acting Director.

NATIONAL REVENUE, CUSTOMS AND EXCISE
REVENU NATIONAL, DOUANES ET ACCISE

Refer to:
4020-56
6/9951

Ottawa 2,
April 14, 1966.

Mr. Geo. H. Glass,
First Vice-Chairman,
The Tariff Board,
219 Argyle Avenue,
Ottawa 4, Ontario.

Dear Mr. Glass:

In the absence of Mr. Labarge, I have for reply your letter of April 1st and enclosure, concerning Reference No. 137 covering proposed wording of a tariff item to replace tariff item 40920-1. Your comments concerning Mushrooms in relation to fresh fruits and fresh vegetables are noted.

Vegetables and fruits in various forms are listed in tariff items 8305-1 to 10704-1. Mushrooms are named in tariff items 8500-1 and 8505-1. Whether or not mushrooms are regarded as vegetables would have no effect on the administration of these tariff items.

In the administration of tariff item 40920-1, it is noted that various dictionaries define mushrooms as edible fungus. Nevertheless, in view of the advice given by Dr. A.P. Chan, Department of Agriculture and by others, the Department is prepared to accept machinery and equipment for mushrooms under a provision for "machinery and equipment for fresh fruits or fresh vegetables".

Yours very truly,

A.R. Hind,
Assistant Deputy Minister,
Customs.

CAI FN55

-67R38



CANADA

Report by

THE TARIFF BOARD

Relative to the Investigation Ordered
by the Minister of Finance
respecting

**CERTAIN PRECISION
INSTRUMENTS AND APPARATUS**



Reference No. 138



Report by
THE TARIFF BOARD

Relative to the Investigation Ordered
by the Minister of Finance
respecting

**CERTAIN PRECISION
INSTRUMENTS AND APPARATUS**

Reference No. 138

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1967

THE TARIFF BOARD

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ECONOMIST

V.R. St. Louis

The Honourable Mitchell Sharp, P.C., M.P.
Minister of Finance
Ottawa

Dear Mr. Sharp:

I refer to your letter of December 13, 1965, in which you requested the Tariff Board to conduct an inquiry respecting certain precision instruments and apparatus.

In conformity with Section 6 of the Tariff Board Act, I have the honour to transmit the Report of the Board relating to the precision instruments and apparatus, in English and in French. A copy of the transcript of the proceedings at the public hearings accompanies the Report.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "J. C. Mulcahy", with a stylized flourish at the end.

Chairman

SYMBOLS

- Denotes zero or none reported
- .. Indicates that figures are not available
- * In statistical tables, indicates a reported figure which disappears on rounding, or is negligible
- (a) A small letter in brackets denotes a footnote to a table
- (1) A number in brackets denotes a footnote to the text
- s.c. Denotes a Dominion Bureau of Statistics import or export statistical class
- (p. --) Denotes a page from the transcript of proceedings at the public hearing unless the context clearly indicates another cited reference

The sum of the figures in a table may differ from the total, owing to rounding

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OTTAWA, December 13, 1965

Mr. L.C. Audette, Q.C.
Chairman
The Tariff Board
OTTAWA.

Dear Mr. Audette:

The Government has received representations to the effect that the provisions of the Customs Tariff relating to certain precision instruments and apparatus used in such activities as engineering, surveying and drafting, and to machinists' or metal workers' precision tools and measuring instruments are in need of review and revision in the light of technological developments which have taken place since many of the present provisions were introduced.

I, therefore, direct the Tariff Board to make a study and report under section 4(2) of the Tariff Board Act on tariff items 43125-1, 43130-1, 43130-2, 43150-1 and 43155-1. The Board may also include in its study other related items which it considers relevant to its enquiry.

If the Board's study should indicate that amendments to the Customs Tariff are desirable, I would request the Board to prepare a revised schedule of tariff items, with recommendations as to rates of duty.

Yours sincerely,

MITCHELL SHARP

Date of Public Hearing
and
List of Companies and Associations
which made Representations

A public hearing before the Board was held at Ottawa on January 9 and 10, 1967. Companies and Associations which made representations were:

Agatronics Ltd.	Toronto, Ontario
Barringer Research Limited	Rexdale, Ontario
*Carsen Instruments Limited	Toronto, Ontario
Dalcan Equipment, Ltd.	Calgary, Alberta
Electronic Industries Association of Canada	Toronto, Ontario
*Federation of British Hand Tool Manufacturers, The	Sheffield, England
*Gauge and Tool Makers' Association, The	London, England
Hildon Corporation Limited	Toronto, Ontario
Huntec Limited	Toronto, Ontario
James Neill & Co. Canada Limited	Toronto, Ontario
*Lufkin Rule Co. of Canada, Ltd., The	Barrie, Ontario
McPhar Geophysics Limited	Don Mills, Ontario
Sharpe Instruments of Canada Limited	Downsview, Ontario
L.S. Starrett Co. of Canada Ltd., The	Rexdale, Ontario
L.S. Starrett Co. Ltd., The	Jedburgh, Scotland
L.S. Starrett Co., The	Athol, Mass., U.S.A.
Wild of Canada Limited	Ottawa, Ontario

*Not represented at the hearing

INTRODUCTION

This Report is concerned with precision instruments and apparatus covered in tariff items 43125-1, 43130-1, 43130-2, 43150-1 and 43155-1. All the goods under these items are allowed duty-free entry under the British Preferential Tariff. The goods provided for in item 43150-1 are also duty-free when imported under the Most-Favoured-Nation Tariff; those under tariff items 43130-2 and 43155-1 are dutiable at 5 p.c., M.F.N. and those under items 43125-1 and 43130-1, at 9 p.c., M.F.N. Some of the items are end-use in that the goods provided for must be used for the specified purposes; other items, while descriptive of types of goods which certain users require, are not restricted in coverage to importations by those users. The tariff items under review are reproduced in Appendix II, with their histories.

The five tariff items referred to the Board by the Minister of Finance do not pertain to a specific industry; the items deal with four types of goods as follows:

- Tariff Item 43125-1 - named machinists' or metal workers' precision tools and measuring instruments as well as machinists' or metal workers' precision tools and measuring instruments not otherwise provided for in the Customs Tariff;

- Tariff Items 43130-1 and 43130-2 - named engineers', surveyors' and draftsmen's precision instruments and apparatus and drafting instruments of all kinds;

- Tariff Item 43150-1 - geophysical surveying precision instruments and equipment, of a class or kind not made in Canada, for use exclusively in prospecting for, or in the exploration and development of, petroleum, natural gas, water wells and minerals, or for geophysical studies for engineering projects;

- Tariff Item 43155-1 - photogrammetric instruments and equipment, of a class or kind not made in Canada, for use in the interpretation of photographs and in the preparation of maps and plans for photographs.

In addition to certain specified goods, the tariff items, in some cases, contain general provisions which allow entry of other related tools and equipment. The uses and the manufacture of these goods have changed appreciably as technological advance has continually extended the range of equipment and its suitability for different uses. However, only a few cases were cited before the Board in which the tariff items were said not to provide adequately for relevant products of interest to producers or importers.

The word "precision", as used in tariff items 43125-1, 43130-1 and 43150-1, is interpreted in the administration of the items and not defined specifically in Tariff legislation. To a user, the

precision of an instrument might be thought of in terms of its application and the results it achieves; to a producer, it might be thought of in terms of the engineering skill required and the very fine tolerances permitted in the manufacturing process. The meaning of the word "precision", however, has never been a serious problem in the administration of these tariff items. With respect specifically to item 43125-1, for example, a spokesman for The L.S. Starrett Co. of Canada Ltd., Rexdale, Ontario noted:

"I am not trying to argue that the word precision is without question having a clear meaning; I realize it isn't, but we have lasted these many years with the word precision in the tariff item". (p. 27)

The products under review vary greatly in the purposes they serve and in the degree of technical sophistication. They range from relatively simple articles such as the curves used by draftsmen to highly complex instruments such as plotting machines used in the production of maps from aerial photographs.

Very few of the goods in the Reference can be mass produced and even these must generally be individually inspected and tested. Tooling is a major element in the cost of producing most of the goods in this Reference; except for some geophysical equipment and simple pieces of apparatus it is generally not feasible for Canadian manufacturers to tool up to produce the great variety of equipment required in limited quantities by the Canadian market. To be successful, the Canadian producer must go beyond the domestic market, as he has done for certain types of geophysical equipment. The comparatively large amount of mineral and other exploration which is carried on in Canada under so many different conditions has encouraged the manufacture in Canada of a very advanced range of geophysical equipment. Its manufacture, for the most part, does not call for large capital outlays for production machinery but it does require a high degree of technical know-how, developed through application of the equipment to specific tasks. Canadian producers have gained a world-wide reputation in the production and use of some types of geophysical equipment.

Except for certain types of geophysical equipment made in Canada, the market for the tools, instruments and apparatus is supplied chiefly by importers, some affiliated with foreign producers and others who act simply as agents or distributors of a line of equipment. Some distributors also repair and service the equipment they sell.

The producers of geophysical equipment in Canada rely heavily on imported parts which are assembled into the equipment they make, sell and use; their interests were said to be generally best served by free entry or at least the continuation of the relatively low rates of duty on such parts. This interest was reinforced by the fact that a considerable part of their production is exported.

Thus, the main submissions were expressions of import interest in complete equipment or parts by Canadian producers and importers, supported to some degree by foreign suppliers. Principally because of the nature of the trade in the products, the Board received no representations from final users of the equipment, except from those producers who also use the equipment. There were no requests

specifically for higher rates of duties though there were some representations from producers of related equipment urging that the scope of the items should not be expanded to encompass goods of their manufacture which are now protected by higher rates of duty.

The articles imported under the items are not consumer goods but rather equipment used in the production of goods and services. The cost of the equipment, and of the imported parts, is a small part of the value of the ultimate services for which the equipment is used. The relatively small value of trade in the products, however, is not a fair measure of the very important role which the equipment has in the economy, or of the contribution which the production and use of such equipment can make to the development of scientific and technical skills. In this latter regard, the research and development aspects of the manufacture and use of the equipment, though not great in absolute terms when compared with larger industries, are very significant. These are presented in more detail in the section on geophysical equipment, under tariff item 43150-1.

The Canadian market for the goods included in this Reference is estimated at about \$15 million per year. This estimate excludes similar goods entered under other items in the Customs Tariff such as equipment and apparatus for use by universities and other institutions provided for in tariff item 69605-1. The estimate also excludes geophysical equipment of a class or kind deemed to be made in Canada, such as portable geiger muller counters and ground magnetometers, which are dutiable elsewhere in the Customs Tariff. The estimate of \$15 million includes nearly \$4 million of equipment, mostly seismographic, used in oil and natural gas exploration. This equipment is, for the most part, not made in Canada and was not raised as a matter of concern by the parties coming before the Board; it is excluded from further consideration here. It should be noted that, if tariff item 43150-1 did not exist, most of this equipment for oil and gas exploration would be admissible duty-free under tariff item 49105-1.

The imports include about \$300,000 worth of parts used in the production of geophysical equipment in Canada.

Estimates of the market, in the divisions represented by the tariff items, are presented in Table (1) on the following page.

As Table (1) shows, most of the equipment is imported. Extensive enquiries confirmed that only a small part of the Canadian market is supplied from Canadian production; this is almost entirely geophysical equipment. Excluding the \$4 million of seismographic equipment noted above, Canadian production, including the production of goods retained by producing companies for their own use or for rental, has apparently supplied about 35 per cent of the market for geophysical equipment; Canadian manufacturers do not produce a complete line of geophysical equipment but consider that they supply most of the demand for the types they do produce. It is interesting to note that about one-half of what they produce is exported.

Table (1)

Estimate of the Canadian Market for Relevant Precision Instruments,
October 1, 1965 to September 30, 1966

<u>Tariff Item</u>	<u>Canadian Production</u>	<u>Imports</u>	<u>Exports</u>	<u>Apparent Consumption</u>
	- thousand dollars -			
43125-1	-	5,493	-	5,493
43130-1	-	3,432	-	3,432
43130-2	-	306	-	306
43150-1	1,100	5,171 ^(a)	560	5,711 ^(a)
43155-1	-	580	-	580
Total	1,100	14,982 ^(a)	560	15,522 ^(a)

(a) Includes nearly \$4 million of apparatus and equipment for petroleum and natural gas exploration and discovery

Source: Dominion Bureau of Statistics and Tariff Board Survey

Table (2) shows the \$15 million of imports by principal countries of origin for the twelve months, October 1, 1965 to September 30, 1966. The U.S.A. was the source of about 70 per cent of the imports; Britain, West Germany and Switzerland divided almost equally another 20 per cent and Japan was the other principal supplier. This pattern of supply appears to have been followed fairly consistently over the six preceding years. During the years 1959 to 1963 imports of precision instruments and apparatus under these tariff items averaged about \$7 million of which just over \$3 million were entered duty-free. The average duty collected on the dutiable goods was 8.6 per cent (Appendix I). The appreciable increase in imports between 1963 and 1966 seems to have applied generally to the various types of equipment under review. The producers of equipment in Canada did not suggest that the increase in imports confronted them with any unusually heavy competitive pressures.

It is apparent from Table (2) that the U.S.A. is by far the dominant source of supply of the various kinds of equipment. Only for the precision survey and drafting equipment of tariff item 43130-1 does Western Europe about equal the United States. The British interest under that item and under tariff item 43125-1 is also evident. For the small portion of total imports that is of photogrammetric equipment (tariff item 43155-1), Switzerland exceeds the U.S.A. as a source of supply.

Table (2)

Imports of Goods by Relevant Tariff Items and
by Principal Countries of Origin, October 1, 1965 to September 30, 1966

Tariff Item	United States	Fed. Rep. of Switzerland				Japan	Others	Total
		Britain	Germany	land				
- thousand dollars -								
43125-1	4,132	791	143	89	245	93	5,493	
43130-1	1,321	251	758	467	392	246	3,432	
43130-2	116	4	68	25	80	13	306	
43150-1	4,918	148	3	51	*	51	5,171(a)	
43155-1	<u>130</u>	<u>9</u>	<u>32</u>	<u>372</u>	<u>6</u>	<u>30</u>	<u>580</u>	
Total	10,617	1,203	1,004	1,004	723	433	14,982(a)	

(a) Includes nearly \$4 million of apparatus and equipment for
petroleum and natural gas exploration and discovery

Source: Dominion Bureau of Statistics

TARIFF ITEM 43125-1The Products, the Users and the Suppliers

Tariff item 43125-1 deals with certain specified machinists' or metal workers' precision tools and measuring instruments as well as machinists' or metal workers' precision tools and measuring instruments, not otherwise provided for in the Tariff.

Tariff Item	Goods Subject to Duty and Free Goods	British	Most-	General
		Prefer- ential Tariff	Favoured- Nation Tariff	
43125-1	Machinists' or metal workers' precision tools and measuring instruments, viz.:— Calipers, micrometers, metal protractors and squares, bevels, verniers, gauges, gauge blocks, parallels, buttons, mercury plumb bobs, dividers, trammels, scribes, automatic centre punches, hand speed indicators, straight edges, key seat clamps and other clamps and vises used by toolmakers for precision work, precision tools and measuring instruments, n.o.p.; parts of all the foregoing, finished or not	Free	9 p.c.	10 p.c.

While there is an ever-increasing variety of machinists' tools and measuring instruments being produced, some of the products in this study were being manufactured in the latter part of the Nineteenth Century. The newer products, of course, are more sophisticated and accurate.

Machinists' and metal workers' precision tools and measuring instruments are used for handling and laying out work to be processed; the operations include the placing of lines, circles, centres and the like upon the surface of the material to serve as guides in producing the finished product. The tools and instruments are also used to transfer data, for example, the size of angles, to the work piece; they are also used for precision inspection of the work to determine such factors as straightness, squareness, angularity, thickness, depth and distance between points.

Although tariff item 43125-1 provides for precision tools and measuring instruments, no distinction between the two types of goods has been found necessary in the administration of the tariff item. Calipers, dividers, gauges, micrometers, protractors and verniers are considered to be precision measuring instruments but they are also, at times, referred to as precision tools. There are some

products listed in the item which are not regarded as precision measuring instruments but as precision tools; these include buttons, key seat clamps, scribes and straight edges.

The provision in the item for precision tools and measuring instruments, n.o.p., allows for the importation of a large number of machinists' or metal workers' tools and measuring instruments which are not provided for by name in the item. For example, the provision could include such goods as comparators for the accurate comparison of standards of length, centre testers for testing the centre on machined work, centre finders used for layout, checking and inspection work, edge finders used for fast accurate location, as well as a large number of other checking and measuring devices and some work fixtures.

Based on a survey conducted by the Board and information gathered at the public hearing, there appears to be no Canadian producers of these machinists' or metal workers' precision tools and measuring instruments. The products are sold by distributors or importers some of which are affiliated with foreign producers while others act as independent agents. In respect of Canadian production, a spokesman for Hildon Corporation Limited, Toronto, an importer, stated:

"That there is no Canadian manufacturing industry is understandable. In this industry it is necessary for a manufacturer to produce at least one thousand types and sizes of precision tools and measuring instruments of a type used by machinists or metal workers. In the case of metal measuring rules of a kind which the trade considers to be precision instruments, there are more than two hundred styles and variations ...

"Because of the lack of size of the Canadian market and also the lack of technical skills in Canada which would be needed in this particular line of endeavour, it is submitted that no such manufacturing industry will likely be established in Canada in the foreseeable future." (p. 41)

The Market

Information on the apparent consumption for the goods provided for in tariff item 43125-1 is not complete; however, based on the Board's survey and other information, current consumption, as represented by imports, is estimated at between five and six million dollars annually; no representations were received from Canadian producers of such goods. A substantial part of the imports is of products not listed specifically and which therefore enter under the "n.o.p." provision of the item. However, all of the provisions for specific types of equipment are used; gauges and gauge blocks, calipers, micrometers and metal protractors and squares are entered in significant amounts. In total, the named articles accounted for just over one-half of the surveyed imports, suggesting a Canadian market for these articles of about \$3 million.

The imports under tariff item 43125-1 for the period October 1, 1965 to September 30, 1966, by major countries of origin, are outlined in Table (3).

Table (3)

Imports under Tariff Item 43125-1
by Major Countries of Origin, October 1, 1965 to September 30, 1966

<u>Country</u>	<u>Total Value \$'000</u>	<u>Free Value \$'000</u>	<u>Dutiable Value \$'000</u>	<u>Duty Collected \$'000</u>	<u>Percentage Supplied %</u>
United States	4,132	19	4,113	384	75.2
United Kingdom	791	781	10	*	14.4
Japan	245	-	245	24	4.5
Germany, Fed. Rep.	143	-	143	13	2.6
Switzerland	89	-	89	8	1.6
Others	<u>93</u>	<u>1</u>	<u>92</u>	<u>8</u>	<u>1.7</u>
Total	5,493	801	4,692	438	100.0

Source: Dominion Bureau of Statistics

Proposals and Representations

The L.S. Starrett Co. of Canada Ltd., Toronto, is a major importer of precision tools and measuring instruments used by machinists, metal workers and toolmakers. The firm made the main proposal respecting tariff item 43125-1; its effect would be to have included in the item certain goods which are at present otherwise dutiable at a higher rate. The company also sought to clarify existing terminology. The company proposed that the general description of goods be revised to:

"Toolmakers', machinists' or metal workers' precision tools, gauges and measuring instruments". (p. 8)

The addition of the words "toolmakers" in the caption is for the purpose of clarification and is not intended to change the coverage of the item; Starrett indicated that a toolmaker is regarded by some as a distinct class of skilled worker. For purposes of the administration of the item, toolmakers are regarded as machinists. The inclusion in the general descriptive heading also would permit deletion of the word "toolmakers" from the specific provision in the item concerning key seat clamps and other clamps and vises.

Starrett also proposed that the references to "gauges" and to "gauge blocks" be changed to "gauges of all kinds" or, alternatively, that the reference to "gauges" be extended to provide by name for other types of gauges in addition to "gauge blocks", which the company considers to be a category of gauge. The company indicated that it intended that any provision for gauges should include thickness gauges, designed to measure gaps or clearances, whether these are imported in short lengths or in rolls. At present some thickness gauges are imported in 12-inch lengths; these are allowed entry under tariff item 43125-1. However, the same feeler stock imported in roll or dispenser form is classified under 44603-1 at 10 p.c., B.P. and 22½ p.c., M.F.N.

The firm also proposed that the reference to "automatic centre punches" in item 43125-1 be changed so that other centre punches which the company regards as precision tools would be admitted under the item; at present other centre punches are classified according to the material of which they are made.

Starrett also proposed that the provision for "key seat clamps and other clamps and vises used by toolmakers for precision work" be changed to "clamps and vises of all kinds used for precision work", or that the reference to clamps and vises be extended to provide by name for "rule clamps" and other particular types of clamps as well as "key seat clamps". At present rule clamps and some other types of clamps are not allowed under the item; rule clamps are classified according to the material of which they are made; most are entered under tariff item 44603-1 at 10 p.c., B.P. and 22½ p.c., M.F.N.

The company would also like to have the item extended to provide for "precision screwdrivers" which are specially designed for delicate work with small screws as used by toolmakers, watchmakers, jewellers and opticians, and also to provide for high precision rules of the types used by toolmakers, machinists and metal workers. At present the screwdrivers are classified under tariff item 43120-1 at 10 p.c., B.P. and 22½ p.c., M.F.N.; most rules, whether high precision or not, are classified under tariff item 43135-1 at 15 p.c., B.P. and 22½ p.c., M.F.N.

Another proposal respecting the scope of tariff item 43125-1 was made by the Hildon Corporation Limited, Toronto, an importer of the goods in the item. The company supported the Starrett proposal to include high precision rules and also proposed the inclusion of measuring tapes. This proposal was supported by The Federation of British Hand Tool Manufacturers, Sheffield, England and by The Gauge and Tool Makers' Association, London, England.

Hildon proposed that "precision" be related to standards established by the Canadian Government Specifications Board. The company indicated that it regards rules and measuring tapes of metal as precision tools. In this connection, the firm submitted that such goods were specifically enumerated in tariff item 431c(now 43125-1) prior to May 2, 1936, as types of precision tools. At present, they are classified under tariff item 43135-1, "Measuring rules and tapes of all kinds"; this item was not specifically referred to the Board.

James Neill & Co. Canada Limited, Toronto, also an importer, proposed no change in the wording of the existing item, although, like Hildon, the company would not object to any expansion of the scope of the item to accommodate technological change. This proposal was supported by The Federation of British Hand Tool Manufacturers.

The Lufkin Rule Co. of Canada Ltd., Barrie, Ontario, proposed that if any provision were to be made for precision rules it be restricted to "machine divided measuring rules" which the company does not manufacture; the company also opposed any reduction in duties on the tapes which it manufactures in Canada.

Concerning rates of duty, Starrett, Hildon and James Neill proposed no change in the existing rates, namely, Free under the British Preferential Tariff and 9 p.c. under the Most-Favoured-Nation Tariff. Hildon and James Neill import goods only from Britain and were interested in the maintenance not only of free entry under the British Preferential Tariff but also of the existing margin of preference. The Federation of British Hand Tool Manufacturers and The Gauge and Tool Makers' Association supported the proposals for no change in the existing rates.

TARIFF ITEMS 43130-1 and 43130-2The Products, the Users and the Suppliers

Tariff item 43130-1 deals with engineers', surveyors' and draftsmen's precision instruments and apparatus and drafting instruments of all kinds. The item is as follows:

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
43130-1	<p>Engineers', surveyors' and draftsmen's precision instruments and apparatus, namely:</p> <p>Alidades;</p> <p>Altazimuth surveying instruments;</p> <p>Aneroid barometers, engineering, military and surveying;</p> <p>Boards, military sketching;</p> <p>Clinometers;</p> <p>Compasses;</p> <p>Cross staff heads;</p> <p>Curves, adjustable, irregular, railroad and ship;</p> <p>Curvimeters;</p> <p>Dipping needles;</p> <p>Drafting instruments of all kinds, including fitted cases containing the same;</p> <p>Drafting machines;</p> <p>Geodimeters;</p> <p>Heliographs;</p> <p>Integrators;</p> <p>Levels, tripod and hand or pocket types;</p> <p>Liners, section;</p> <p>Meters, portable for hydraulic engineering;</p> <p>Pantographs;</p> <p>Parallel rules;</p> <p>Parallel ruling attachments;</p> <p>Pedometers and paceometers;</p> <p>Plane tables, military and topographic;</p> <p>Planimeters;</p> <p>Poles, ranging;</p> <p>Prisms, angle;</p> <p>Protractors;</p> <p>Rods, levelling;</p> <p>Scales, flat and triangular;</p>			

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
43130-1 (Cont'd)	Sextants, box; Slide rules; Splines; Straight edges, steel or wooden; Tacheometers; Tallying machines, pocket; Tee squares, steel or wooden; Telemeters; Theodolites; Transits, tripod and hand or pocket types; Triangles of all types; Tripods for use with any of the foregoing instruments; Parts of all the foregoing	Free	9 p.c.	10 p.c.

Tariff item 43130-2 is an Extract of tariff item 43130-1 and provides a most-favoured-nation rate, under a GATT agreement, of 5 per cent for the slide rules provided for in item 43130-1. The item is as follows:

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
43130-2	Slide rules		5 p.c.	

Except for the addition of geodimeters, the listing of instruments and apparatus in item 43130-1 has not been changed since May 2, 1936. (See tariff history of item 43130-1 in Appendix II). The item is specific in that it provides only for certain named types of precision instruments, apparatus and parts, and is therefore restricted to these. Unlike the other items in the Reference, this item contains no general provision which would allow entry of other types of similar engineering and surveying instruments. Some other instruments and apparatus, used in conjunction with the listed goods, are not entitled to entry thereunder, a matter which brought forward proposals that the item be revised.

The products enumerated in tariff items 43130-1 and 43130-2 may be considered in two groups: engineers' and surveyors' precision instruments and apparatus, and drafting instruments and apparatus.

Engineers' and Surveyors' Precision Instruments and Apparatus

The engineers' and surveyors' precision instruments and apparatus under consideration are designed for determining such features as azimuth, distances, elevations, altitudes, horizontal and vertical angles, direction, area and rate of flow. While the general principles upon which the design of surveying and engineering instruments and apparatus is based have not greatly changed over the years there have been vast improvements in detail by manufacturers. Many of the improvements have been directed towards greater precision and serviceability in the instruments; some have been concerned with the simplification of the apparatus and in reducing weight by taking advantage of light alloys in order to make the instrument easier to handle and use. New materials have also enabled producers to incorporate design improvements which have made the apparatus more accurate. In addition, a new range of equipment has been developed incorporating advanced electronic principles and making use of light and radio waves and other remote sensing techniques.

A survey conducted by the Board and information presented at the public hearing revealed no Canadian producers of engineering and surveying instruments and apparatus. The production of such goods entails a great deal of research and development and requires considerable craftsmanship and fairly substantial capital outlays for production machinery and apparatus. In this connection the spokesman for Wild of Canada Limited, Ottawa, an importer, stated:

"The majority of the equipment imported under Tariff Item 43130-1 is of a class and kind not made in Canada. Because of the nature of the equipment and the extremely high cost of its manufacture, we think it unlikely that our imports from abroad will, in the foreseeable future, have any adverse effect on Canadian industry.

"As has been mentioned before in the field of precision instruments surveying equipment and many of the other items covered presently by 43130-1, I just cannot see for years and years to come that they will be manufactured in Canada ... The demand is just not great enough to warrant the cost of erecting a factory which ultimately would have to have several million dollars worth of precision tools and equipment, jigs, and more importantly, the difficulty of finding the highly skilled technicians who are required to manufacture, mount and calibrate these instruments." (p. 93)

The Federal Government, especially the Departments of Energy, Mines and Resources, Public Works and National Defence, is one of the largest users of surveying and engineering instruments for field or engineering surveys. There are of course many other users such as the provincial governments, universities, commercial surveying companies and land surveyors.

The products are imported mainly by agents and distributors, some of which are affiliated with foreign firms. Some distributors of foreign-produced engineering and surveying equipment have facilities in their establishment for repairing, overhauling, and modifying the products they sell.

Drafting Instruments and Apparatus

Item 43130-1 provides for draftsmen's precision instruments and apparatus, some by name and some under the provision for "drafting instruments of all kinds".

Much of the drafting apparatus consists of relatively inexpensive items which are mass produced. Drafting instruments and apparatus are generally not as complex in nature as surveyors' and engineers' precision instruments and apparatus although they must, of course, be accurate. For example, a drafting curve is simply a thin flat piece of wood, celluloid or other material cut in a particular shape. Other products, such as parallel rules, parallel ruling attachments, protractors, scales, slide rules, splines, straight edges, tee squares and triangles, also are of relatively simple design.

The Board's survey and the information presented at the public hearing indicated no Canadian producers of drafting instruments and apparatus. The imported products are generally sold by agents and distributors, some of whom are affiliated with foreign producers.

The Market

Information on the consumption of goods provided for in tariff items 43130-1 and 43130-2 is not complete; however available information suggests that current consumption is something less than \$4 million annually, apparently all supplied by imports.

In the twelve months from October 1, 1965 to September 30, 1966, imports under item 43130-1 were valued at \$3.4 million. Based on a survey conducted by the Board, about 40 per cent of these imports was accounted for by theodolites, transits and levels and another 35 per cent by drafting instruments and drafting machines.

The imports under tariff item 43130-1 for the period October 1, 1965 to September 30, 1966, by major countries of origin are outlined in Table (4) on the following page.

Of the dutiable imports, only the small quantity from East Germany was entered under the General Tariff, at 10 p.c., ad valorem; the remainder was entered under the 9 p.c., M.F.N. rate. It is apparent from the table that nearly 40 per cent of the equipment came from the U.S.A. and just under 50 per cent came from West Germany, Switzerland and Japan. Duty-free imports accounted for just under 8 per cent of the total, nearly all from Britain.

Imports of slide rules under the Extract, item 43130-2, for the same twelve-month period, were valued at just over \$300,000; the U.S. share was again nearly 40 per cent and that of West Germany and Japan, together, nearly 50 per cent.

Table (4)

Imports under Tariff Item 43130-1
by Major Countries of Origin, October 1, 1965 to September 30, 1966

<u>Country</u>	<u>Total Value \$'000</u>	<u>Free Value \$'000</u>	<u>Dutiable Value \$'000</u>	<u>Duty Collected \$'000</u>	<u>Percentage Supplied %</u>
United States	1,321	5	1,315	117	38.5
Germany, Fed. Rep.	758	-	758	69	22.1
Switzerland	467	-	467	42	13.6
Japan	392	-	392	36	11.4
United Kingdom	251	245	6	*	7.3
Sweden	88	-	88	9	2.6
Germany, East	45	-	45	5	1.3
Others	<u>110</u>	<u>11</u>	<u>101</u>	<u>8</u>	<u>3.2</u>
Total	3,432	262	3,170	286	100.0

Source: Dominion Bureau of Statistics

Proposals and Representations

Tariff Item 43130-1

With respect to changes in wording, Wild of Canada Limited, an importer, proposed that item 43130-1 be amended by adding provisions for: gyro attachments and converters, invar subtense bars, accessories and attachments for the instruments and apparatus in the items and fitted cases when imported together with the instruments and apparatus in the item. The spokesman for Wild later proposed that the fitted cases be allowed entry under the item whether or not imported with the instruments and apparatus. These fitted cases, when imported with engineers' and surveyors' instruments and apparatus, gyro attachments and converters, which are designed for use with theodolites to provide the surveyor with a true north orientation, as well as some other attachments, while not specifically provided for in the item, are permitted entry under it. The proposal with respect to these articles, therefore, was for purposes of clarification rather than to bring about substantial change in the present administration of the item. However, fitted cases when not imported with instruments and apparatus, invar subtense bars (precise measuring instruments used with theodolites for horizontal distance measurements), as well as some of the so-called accessories or attachments for the instruments and apparatus in the item are dutiable elsewhere in the Customs Tariff; the proposal would have the effect of attracting such goods to the item at lower rates of duty than apply at present.

Wild proposed the following rates of duty for tariff item 43130-1:

<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
Free	5 p.c.	20 p.c.

With respect to the proposed changes in the M.F.N. and General rates, a spokesman for Wild, which imports under the M.F.N. Tariff, stated:

"We feel a reduction in the tariff rate would be beneficial to the survey industry which is primarily engaged in the development of our country. We therefore propose a reduction in the Most-Favoured-Nation Tariff from 9% to 5%.

"Tariff items 43130-1, 43150-1 and 43155-1 cover closely related equipment, yet general tariff rates fluctuate widely and we recommend greater consistency by increasing the general tariff for item 43130-1 to 20%." (p. 94)

Carsen Instruments Limited, an importer, made a similar proposal concerning the rates under the British Preferential and Most-Favoured-Nation Tariff and proposed a rate of 10 per cent under the General Tariff.

Concerning the wording of item 43130-1, Carsen proposed that fitted cases when imported with the surveying instruments "should be accorded [the] same tariff treatment as fitted cases for drafting instruments, which are presently mentioned under tariff item 43130-1". (p. 126) The firm also proposed that the item be expanded to include "surveyors' tapes, 50 feet or larger; or in any length, when graduated to the decimals of an inch". (p. 125) The firm noted that such tapes are used by professional surveyors; they are classified under tariff item 43135-1 at rates of 15 p.c., B.P. and 22½ p.c., M.F.N.

The L.S. Starrett Co. of Canada Ltd., an importer, proposed that specific reference be made in the item to high precision rules; these goods are at present classified under tariff item 43135-1 at rates of 15 p.c., B.P., and 22½ p.c., M.F.N.

The spokesman for Starrett stated:

"We understand that the provision for 'Scales, flat and triangular' in the item 43130-1 is now administered as covering certain high precision products which we call rules, but that in its administration the Customs Division has to some considerable extent relied upon the description of a particular product in trade literature. We are of the belief that at least some of the products which we describe as 'rules' would now qualify for entry under item 43130-1 were they otherwise described in our trade literature." (p. 11)

Hildon Corporation Limited, Toronto, made a proposal somewhat similar to that of Starrett in respect to precision rules; Hildon also requested that the item be extended to tapes designed for use by engineers, surveyors and draftsmen. The spokesman for Hildon stated:

"In view of the fact that there are types of measuring rules and tapes which are designed for use by engineers, surveyors and draftsmen and which can be properly described as precision instruments and apparatus, and because existing tariff item 43130-1 relates to specified precision instruments and apparatus, it is proposed that there be an addition to the enumerated items presently set out in this tariff item. Such an addition to the enumerated items in this tariff item 43130-1 would read as follows:

'measuring rules and tapes designed for use by engineers, surveyors and draftsmen in accordance with standards prescribed by the Canadian Government Specifications Board'". (p. 36)

To accommodate this proposal, Hildon suggested that tariff item 43135-1 be reworded to apply to: "Measuring rules and tapes of all kinds but not to include measuring rules and tapes covered by tariff items 43125-1 and 43130-1". (p. 37)

Hildon proposed that the rates of duty for item 43130-1 remain unchanged for the same reasons as advanced in respect of item 43125-1. The Hildon proposals were supported by the Federation of British Hand Tool Manufacturers and The Gauge and Tool Makers' Association, both of Britain.

Two British suppliers of tapes, Rabone Chesterman Ltd., Birmingham, and Moore & Wright (Sheffield) Ltd., in correspondence after the hearing, objected strongly to the 15 p.c. British preferential rate on tapes when such goods from Canada are entitled to duty-free entry into Britain. The suppliers reaffirmed that they supported the Hildon proposals in respect to tapes and rules.

Rabone Chesterman, however, proposed, as an alternative, the following wording:

"Precision distance measuring bands 100 ft. and over in length and machine divided rules of all sizes, for use by engineers, surveyors, draughtsmen, machinists and metal workers, in accordance with the standards described by the Canadian Government Specifications Board."

The Lufkin Rule Co. of Canada Ltd., which produces measuring tapes 100 feet and over in length, as well as other tapes, in a brief submitted after the hearing opposed any reduction in duties on the measuring rules and tapes which the company produces in Canada.

Agatronics Ltd., Toronto, an importer of geodimeters, proposed that they be admitted to Canada free of duty. "Geodimeter" is apparently a trade name for an electronic system of exact distance measuring by light beam transmission.

The spokesman for Agatronics stated:

"It is submitted that Geodimeters, although electronic instruments, are by their construction, complexity and use in a different category from ordinary engineering, surveying and

drafting instruments. They require specialized skill both in their manufacture and use. They cannot be manufactured here nor do they compete with any machine or instrument that is manufactured within Canada. Geodimeters are for long range surveying outside the scope of normal surveying instruments and for doing jobs that if done by ordinary surveying instruments require considerably more time with less accuracy. The average error in a Geodimeter siting is 0.03 feet plus or minus two millionths of the distance, for its newest Model 6 instrument.

"For the above reasons it is submitted that Geodimeters as distinct from the accompanying tripods, batteries, and battery chargers, be removed from Tariff Item 431d 43130-1 and allowed to enter Canada free of customs duty." (p. 112)

At the public hearing the spokesman for Agatronics indicated that the firm's proposal for the duty-free entry of geodimeters would apply only to the assembled and completed geodimeter. The company was not referring to component parts, tripods, batteries and battery chargers; these goods are added to the geodimeters in Canada. Also, certain goods used with the geodimeters, such as the reflective prisms and the optics, are produced in Canada; some of these are sent to the foreign manufacturer for assembly in the instruments before shipment to Canada.

From information gathered it would appear that there are certain instruments which are competitive with the geodimeters and which are not provided for in tariff item 43130-1. These instruments are also designed for distance measuring although they employ radar or radio wave transmission rather than a light beam. This type of equipment incorporates fairly recent technological advances and has come into use mainly since the provision for "geodimeter" was introduced in 1957. It is understood that such instruments are classified principally under tariff item 44532-1, Free, B.P., 7½ p.c., M.F.N., and item 44510-1, Free, B.P., 20 p.c., M.F.N.

Tariff Item 43130-2

Carsen Instruments Limited, an importer, made the only proposal respecting tariff item 43130-2. The firm proposed that the present wording be amended to "slide rules and cursors for slide rules". (p. 126) Cursors are the transparent slides which bear a reference line and move along a slide rule. At present slide rules imported under tariff item 43130-2 are dutiable at a rate of 5 p.c. under the Most-Favoured-Nation Tariff; since the item has no provision for parts, cursors imported separately are classified under tariff item 43130-1 at 9 p.c. when imported under the Most-Favoured-Nation Tariff. The spokesman for the company stated:

"These [cursors for slide rules] are items which are often lost or broken and may require frequent replacements. Due to the fact that a cursor is by design committed to be used with a specific slide rule, we feel that a replacement cursor should receive [the] same tariff treatment as the slide rule itself." (p. 127)

Carsen proposed that the rates of duty under the item remain unchanged.

TARIFF ITEM 43150-1The Products, the Users, and the Suppliers

Tariff item 43150-1 deals with geophysical surveying precision instruments and equipment. The item is as follows:

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
43150-1	<p>Geophysical surveying precision instruments and equipment for use exclusively in prospecting for, or in the exploration and development of, petroleum, natural gas, water wells and minerals, or for geophysical studies for engineering projects, including the following: Magnetometers; gravity meters and other instruments designed to measure the elements, variations and distortions of the natural gravitational force; field potentiometers, meggers, non-polarizing electrodes, and electrical equipment for making measurements in drill holes; instruments and equipment for seismic prospecting; geiger muller counters and other instruments for radioactive methods of geophysical prospecting; electrical and electronic amplifying devices and electrical thermostats designed to be used with any of the foregoing; sodium iodide crystals, thallium activated, in rough cut blanks, when imported to be manufactured into parts for use in instruments for prospecting; all the foregoing of a class or kind not made in Canada, and parts, tripods and fitted carrying cases for any of the foregoing ...</p>	Free	Free	30 p.c.

It will be noted that the item provides for any type of geophysical instrument or equipment which meets the end-use and not-made-in-Canada provisions.

Geophysics deals with the investigation of properties of the earth and its surroundings by methods of physics. Man's relation to the earth is such an important one that throughout the centuries he has surveyed it to a large extent for various reasons. Geophysics goes back at least to the observations made by early navigators of the weather and ocean tides. In ancient times the methods were crude but fairly effective for the purposes needed, such as land surveys, travel and navigation.

Through the years many ancient methods of studying the earth have been adapted to commercial applications such as finding oil and minerals. Developments have been particularly great over the past forty years. These commercial methods include magnetic, electrical, gravitational, seismic and radioactive geophysical prospecting. The prospecting includes not only surveys conducted on the ground and water but also airborne surveys.

Geophysics has come to play an important part in the Canadian economy especially in the search for oil and minerals; millions of dollars are being spent each month on such explorations. In mining, Canada has introduced many new developments in geophysical exploration and today probably leads the world in the diversification of methods of surveying and the volume of survey activity.

Geophysics can be divided into several fields, each a well-developed science in itself. The divisions include, for example, geodesy, seismology, meteorology, hydrology, oceanography, geomagnetism and volcanology. One of the oldest is geodesy, the study of the earth's shape and of variations in the gravitational pull of the earth. Seismology is the study of the earth's interior by vibrations or waves. Some of these vibrations are produced by earthquakes; some are deliberately induced, for example by explosions, to aid in the search for oil and minerals. Meteorology, dealing with atmospheric measurements, is of importance in atmospheric studies and space research. Hydrology, which deals with the surface waters of the earth, other than the oceans, is important for analyzing water supply situations. Oceanography deals with the study of the oceans including their currents and bottom profiles; this is important for the fishing industries and for oceanic exploration. Geomagnetism is the study of the earth's magnetic field; like seismology this field of study is important in oil and mineral exploration. Volcanology is the study of existing and extinct volcanoes.

The provisions of the tariff item, however, are not in terms specifically of these divisions but rather in terms of types of activity. The discovery of petroleum, natural gas, water wells and minerals is usually preceded by a large amount of exploratory activity; this work is conducted by teams of geologists and other specialists equipped with geophysical instruments. Geophysical precision instruments and equipment for use exclusively in prospecting for or in the exploration and development of petroleum, natural gas, water wells and minerals, or for geophysical studies for engineering projects are provided for under tariff item 43150-1. If item 43150-1 were not in the Tariff, some of the apparatus used in the exploration or discovery and the development of oil and natural gas wells would still be admissible duty-free under tariff item 49105-1. This item is not in the Reference.

Tariff item 43150-1 also provides for geophysical precision instruments and equipment for use in geophysical studies for engineering projects. Here, the equipment generally is used in the analysis of the site for a construction project such as a large building, dam or bridge.

One of the large users of the instruments under review is the Federal Government. The Department of Energy, Mines and Resources does a considerable amount of map-making including magnetic and gravity maps. The information available from such magnetic and gravity maps is of considerable assistance to those who want to use the plotted data as a basis for geological interpretation. The Department also maintains a network of seismograph stations for recording the waves produced by earthquakes in order to obtain a detailed knowledge of the earth's interior and the damage to the earth's structure. Research in meteorology is largely the responsibility of the Meteorological branch of the Department of Transport. The Federal Government engages in many other projects, including studies in hydrology to determine the water resources in various parts of the country. There are also certain studies being made at the provincial level and by universities.

Other users of the goods include firms engaged in geophysical surveys of one kind or another. In many instances, Canadian producers of the geophysical equipment are themselves directly involved in providing this service.

The suppliers of such goods are Canadian and foreign producers or the distributors for such companies. Canada is a leading producer of many types of geophysical equipment although not all kinds of such goods are manufactured in Canada. A spokesman for Sharpe Instruments of Canada Limited, Downsview, Ontario, stated:

"At present, Canada is the foremost manufacturer of geophysical equipment for mineral exploration, a position that should be maintained. A large portion of the sales are made in foreign markets." (p. 156)

Canadian producers of geophysical equipment are sufficiently advanced in the technology and craftsmanship that they produce a large variety of original geophysical equipment as a result of their own applied research. The significance of production in Canada is summarized in the market section below.

The capital outlay for producing geophysical equipment is not as great as that required for producing some other products. The research factor and the highly skilled labour required to make components and assemble them into instruments are of most importance to the industry. The instruments required for geophysical surveying do not lend themselves to mass production since every unit is manufactured with great care and precision. The units are complex in nature and the person assembling them must have special skills. Although the equipment is complex it must be as simple as possible for the operator; weight is also an important consideration for many types of instruments because they are used in field surveys. The users specify ever-increasing precision in the instruments because of the demand for increasingly accurate results.

The Canadian industry consists of a number of relatively small producers specializing in certain types of geophysical equipment. It is extremely difficult for these producers to carry the heavy burden of research and development that is required to meet the increasingly high specifications and the needs for instruments for new uses. Government assistance is available particularly for research into new fields of equipment. Canadians rely on aid both from the Canadian Government and various agencies abroad, particularly in the United States. The research and development aspect is dealt with in more detail below.

The manufacture of geophysical equipment consists essentially of assembling components such as capacitors and resistors into carefully designed, highly complex circuits. In most cases the assembly operations consist of placing various components on terminal boards or in metal cases in predetermined order and making connections between them by means of wire and soldered parts. These tasks are usually done by hand by skilled workers. Since a fault in any of the components or in any connection may cause failure of function, the testing of equipment both during and after assembly is an important phase in the manufacturing process.

Based on a survey conducted by the Board and information gathered at the public hearing it was ascertained that there are at least seven Canadian producers of some of the geophysical instruments provided for in tariff item 43150-1. It is understood that Canadian production of relevant geophysical instruments commenced some 20 years ago and this appears to be reflected in the history of the tariff item (Appendix II). Other than the provision for thallium activated sodium iodide crystals, which was introduced in the Tariff in 1954, the equipment, if of a class or kind not made in Canada, has been allowed duty-free entry, under both the British Preferential and Most-Favoured-Nation Tariffs, since May 19, 1948. Any equipment that is of a class or kind made in Canada would be dutiable under various tariff items such as item 46200-1 ($2\frac{1}{2}$ p.c., B.P., 15 p.c., M.F.N.).

The "class or kind" provision entitles Canadian manufacturers to have goods removed from tariff item 43150-1 when they are deemed to be of a class or kind made in Canada. The products then become dutiable. Canadian producers have not taken advantage of the class or kind provisions of the tariff item except for ground magnetometers, portable land gravity meters, portable geiger-muller counters and like instruments. Because of the duty-free provision for parts for geophysical equipment of a class or kind not made in Canada, the Canadian producers are reluctant to seek "made-in-Canada" rulings. If the equipment is ruled "made-in-Canada" the parts become dutiable generally at the same rate of duty as the equipment itself.

Canadian producers of geophysical equipment noted two additional problems with respect to tariff item 43150-1.

First, to import equipment or parts under item 43150-1 one must produce proof of end-use. In the case of finished instruments an end-use certificate must be produced to the effect that the geophysical instruments are used exclusively in prospecting for or in the exploration and development of, petroleum, natural gas, water wells and minerals, or for geophysical studies in engineering projects.

Similarly end-use certificates are required for parts imported under the item to the effect that such parts are for incorporation into Canadian-produced geophysical equipment used exclusively as provided for in the item. Otherwise duty is payable on such parts at time of importation and a refund of the duty is allowed upon presentation of the end-use certificates. This procedure is cumbersome and costly.

Secondly, a somewhat similar situation exists with respect to duty drawback. A large percentage of Canadian production is exported. These exports incorporate imported parts on which duty has been paid and considerable time is spent on the paper-work necessary to get refunds of duty when the equipment is exported.

Summarizing this situation, the spokesman for McPhar Geophysics Limited, Don Mills, Ontario, stated:

"The main reason of course, that we are here is the fact that this equipment is used for geophysical studies, be it in Canada or exported. For all practical purposes it couldn't possibly be used for anything else, and while the parts are duty free in the end in the sense that they can get refunds or drawbacks, it is the question of time, paperwork, tying up of money with the government, and really this is what McPhar would like to avoid." (p. 182)

The U.S. tariff on geophysical instruments and equipment appears to range from $11\frac{1}{2}$ p.c. to 28 p.c. The Canadian tariff on geophysical instruments and equipment of a class or kind made in Canada ranges from 10 p.c. to $22\frac{1}{2}$ p.c.; however, such instruments and equipment of a class or kind not made in Canada are duty-free under tariff item 43150-1.

Most of the Canadian producers indicated they would prefer free trade between Canada and the United States on all geophysical instruments and equipment and parts although some of them reported they were at present encountering competition from the United States on some kinds of instruments.

Research and Development

Geophysical instruments require continual development for modernization, improvement and the development of new equipment. The research and development (R. & D.) aspect is of utmost importance if Canadian producers are to survive and expand not only in the Canadian market but also in world markets. The expenditures involved are not great when compared to those required by large manufacturing companies but they represent a very appreciable part of the budget of these relatively small companies and are usually a matter of major concern to them. Firms obtain their R. & D. funds internally, from affiliated companies, from contracts with other companies, from the Federal Government, from agencies of the United States Government or from industrial groups or other governments abroad interested in a particular development.

The Federal Government plays an important role in R. & D. by means of awarding contracts as well as in special programs such as the direct assistance programs and development-sharing programs. At the present time there are several Federal Government programs of direct financial assistance.

The Defence Development Sharing Program established in 1959 and administered by the Department of Industry is designed to improve the capacity of Canadian companies to supply military equipment. The Defence Industrial Research Program, which originated in 1961 and is administered by the Defence Research Board of the Department of National Defence, has as its primary objective to promote and strengthen the research capability of Canadian industry in defence technologies. The National Research Council's Industrial Research Assistance Program established in 1962 is intended to stimulate the interest of Canadian industry in scientific research as well as promote the establishment of new industrial research activities and expand the existing ones. The Program for the Advancement of Industrial Technology, established in 1965 and administered by the Department of Industry, is designed to stimulate industrial growth by the application of science and technology to the development of new or improved products and processes for commercial markets at home and abroad. Under any one of the four programs the Federal Government is normally prepared to pay up to 50 per cent of the cost of approved R. & D. projects.

The Federal Government also introduced a special five-year incentive program in 1962 by amending the Income Tax Act to permit corporations to deduct from their income for tax purposes not only 100 per cent of both current and capital expenditures for scientific research, as previously permitted, but also an additional allowance equal to 50 per cent of the increase in such expenditures made in Canada over those in the last taxation year ending before April 11, 1962. Experience under this tax incentive program was very favourable. When it ended in 1966, the Government introduced the Industrial Research and Development Incentives Act which received Royal Assent on March 10, 1967. In general, the Act provides for benefits in the form of non-taxable cash grants or credits against tax liabilities equal to 25 per cent of:

- (a) all expenditures of a capital nature for scientific research or development carried out in Canada and of
- (b) the increase in expenditures of a current nature made in Canada for scientific research or development over the average of such expenditures in the preceding five years.

The geophysical equipment manufacturers make use of these Federal grants in their R. & D. programs. In this connection, a spokesman for Hunttec stated:

"As an aid to the geophysical survey functions performed by this company, Hunttec Limited is carrying out a comprehensive research and development program in new and improved geophysical instruments. These programs are partially supported by various government bodies including the National Research Council, Defence Research Board and the Department of Industrial Research Department of Industry. The total

investment in research by both Huntec Limited and these various government departments amounts to approximately \$300,000 per year at the 1966 level." (p. 173)

The Market

Information on the consumption of the goods in tariff item 43150-1 is not complete; however, based on a survey conducted by the Board, on information gathered at the public hearing and on import data it is estimated that consumption is over \$5.5 million annually, most of which is supplied by imports. As has been noted in the Introduction, this estimate includes nearly \$4 million of equipment, mostly seismographic, imported for use in oil and natural gas exploration. This equipment, for the most part, is not made in Canada and is excluded from further consideration in this section of the Report.

From the Board's survey, it is estimated that Canadian production of the geophysical equipment provided for in item 43150-1 was in excess of one million dollars, of which more than 50 per cent was exported (Table (1)). The balance, about \$540,000, represented approximately 35 per cent of the Canadian market for the relevant equipment, excluding the \$4 million of the seismographic equipment noted above. Producers have not sought made-in-Canada rulings on all the equipment they produce, for reasons mentioned above. Ground magnetometers and portable geiger-muller counters and like instruments for locating radioactive materials which are ruled to be of a class or kind made in Canada are not included in the above figures.

As well as their sales of equipment, producers obtain revenue from servicing and repairing geophysical equipment; they also receive revenue from the rental of equipment. It is estimated that revenue derived from rental, servicing and repair work is of the order of \$200,000 annually.

Most Canadian producers of geophysical equipment, as experts in such equipment, also provide geophysical services; often these provide the largest part of their revenue. The services are provided not only in Canada but also in other parts of the world, often on behalf of various United Nations organizations or other interests outside of Canada. Some of the producers have subsidiary companies abroad.

Imports under tariff item 43150-1 are estimated at just over \$5 million for the one-year period, October 1, 1965 to September 30, 1966. Instruments and equipment for seismic prospecting apparently accounted for over 75 per cent of total imports; most of these were for use by the oil and natural gas industry.

Imports under tariff item 43150-1, for that twelve-month period, by major countries of origin, were:

Table (5)

Imports under Tariff Item 43150-1
by Major Countries of Origin,
October 1, 1965 - September 30, 1966

<u>Country</u>	<u>Total Value \$'000</u>	<u>Percentage Supplied %</u>
United States	4,918	95.1
United Kingdom	148	2.9
Switzerland	51	1.0
Others	<u>54</u>	<u>1.0</u>
Total	5,171(a)	100.0

(a) Includes nearly \$4 million of apparatus and equipment for petroleum and natural gas exploration and discovery

Source: Dominion Bureau of Statistics

In total, as the table shows, the United States is by far the predominant supplier; imports from Britain were second in importance and accounted for all the imports under the British Preferential Tariff.

Parts and Materials

Statistics of total trade in parts and materials for the production of geophysical instruments are not available. Based on the Board's survey, it is estimated that the total imports of parts under tariff item 43150-1 are of the order of \$300,000 annually. Since over 50 per cent of the Canadian factory shipments of finished instruments are exported, the value of imported parts for equipment for use in Canada is estimated at less than \$150,000 yearly.

Most of the parts used in the production of geophysical equipment provided for in tariff item 43150-1 are entitled to entry free of duty under the Most-Favoured-Nation Tariff. Because of the nature of the item some parts are classified elsewhere in the Customs Tariff and a refund of the duty is claimed when the end-use has been certified. The difficulties concerning this arrangement for parts have been noted above.

Proposals and Representations

Representations and proposals concerning tariff item 43150-1 were made by four Canadian producers of geophysical equipment, by one producer of magnetic tapes, and by the Electronic Industries Association of Canada, Toronto.

Barringer Research Limited, Toronto, as a producer engaged in the design, development and manufacture of remote sensing instruments, proposed that the wording of the item be expanded to include an increasing variety of specialized instruments which the company considers was originally intended to be covered by the words "geophysical surveying precision instruments and equipment". This would permit the company duty-free importation of parts used in the manufacture of the instruments. Specifically, the spokesman for Barringer proposed that the item be expanded to cover:

"Instrumentation for the remote and direct detection and measurement of vapours, substances and physical parameters, and including electro-optical spectrometers." (p. 132)

These instruments are not used exclusively in accordance with the end-use provisions of item 43150-1 and, for this reason, the company proposed this form of expansion of the item.

Barringer reported that most of its equipment is exported. In order to relieve the company of the added administrative burden entailed in claiming duty drawback and to reduce the cost to the Canadian consumer, the firm proposed that tariff item 43150-1 be expanded to include all parts and assemblies used in the manufacture of instruments of the types mentioned in the item. The company requested that the parts and assemblies remain duty-free even when the equipment is ruled to be of a class or kind made in Canada. At present, when the geophysical equipment is ruled to be of a class or kind made in Canada, the parts also become dutiable.

Sharpe Instruments of Canada Limited proposed that item 43150-1 be split into two parts. The first part of the item, which would cover finished instruments as provided for in existing item 43150-1, would be expanded to include geophysical equipment which has been developed since the tariff item was originally established; the company did not, however, submit a revised wording. The company proposed duty-free entry for instruments of a class or kind not made in Canada. Instruments of a class or kind made in Canada would be dutiable as elsewhere provided in the Customs Tariff; for these, the company made no proposal concerning rates. The company's proposal regarding the second section of the item was somewhat similar to that made by Barringer for parts. Sharpe proposed duty-free entry for articles and raw materials for use in the manufacture of geophysical equipment, as well as for tripods and carrying cases. At present, materials and those articles which are not parts are not provided for in the item. The company also proposed that all parts, components, raw materials and equipment for use in research and development projects by geophysical equipment manufacturers be allowed importation on a duty-free basis.

Huntec Limited proposed that the tariff item be expanded to include "internal combustion engines, and repair parts thereof, used to generate primary power for the operation of geophysical instruments". (p. 176) The company intended that the provision of class or kind not made in Canada apply to these goods. The spokesman for Huntec stated:

"Following a complete investigation of all possible Canadian sources for an engine which would satisfy the requirements of

the geophysical instruments manufactured by Hunttec Limited, it was found that the only suitable engine was manufactured by JLO Werke GMBH, 208 Pinneberg Bei Hamburg, Postfach 69, Germany. These engines are imported on behalf of Hunttec Limited by Canadian Curtiss Wright Ltd., 500 Carlingview Drive, Malton, Ontario and presently enter the country under Tariff Item 42805-1 attracting a duty rate of 20%. As these engines are of a type not manufactured in Canada and are an integral part of geophysical instrument systems manufactured by Hunttec Limited in Canada, it is submitted that these engines and any repair parts for them should be eligible for import under Tariff Item 43150-1 so long as they are for the use of Hunttec Limited in the manufacture of geophysical instruments." (p. 174)

McPhar Geophysics Limited made a proposal similar to those by Barringer and Sharpe. The company proposed that a new tariff item be introduced to make duty-free provision for "all articles and materials which enter into the construction and form part of geophysical surveying precision instruments and equipment when imported by manufacturers of geophysical surveying precision instruments and equipment". (p. 181)

The proposal by McPhar was made principally to avoid the paper-work of obtaining end-use certificates from Canadian users. Concerning drawback on exported instruments, the company also wished to avoid the paper-work and tying up its capital. The spokesman for the company stated:

"It will be observed then, that should the McPhar company be located in, say, the United States and export their completed products to qualifying users in Canada, such products would enter under the duty free provision of tariff item 43150-1. However, as a Canadian company employing engineering skills and generally contributing to the Canadian economy, it is presently confronted with inconveniences and expenses not encountered by foreign manufacturers of the products in question." (p. 181)

At the public hearing McPhar indicated that, to avoid this inconvenience and expense, the end-use provision of the item might be deleted so that all parts used in the manufacture of the equipment could be imported free of duty at the time of importation. Under these circumstances, McPhar would not object to dropping the "not made in Canada" provision from tariff item 43150-1 so that all the geophysical equipment could enter free of duty under the British Preferential and Most-Favoured-Nation Tariffs. In other words, the company was prepared to compete against duty-free importations of equipment provided the parts could be entered duty-free.

The spokesman for Barringer indicated that he was not adverse to the McPhar proposal for reducing costs. He expressed concern, however, over the duty-free entry into Canada of competitive equipment when the equipment of Canadian manufacture faces U.S. import duties.

The Electronic Industries Association of Canada represented, in general, Canadian manufacturers who produce parts which the Association considers might be incorporated into the electronic apparatus provided for in item 43150-1. The spokesman for the Association, however, admitted that he had no knowledge of attempts by its members to sell parts to the manufacturers of geophysical equipment. The most relevant parts consist of goods such as resistors, capacitors, tubes and semi-conductors. The Association proposed that the phrase "all the foregoing of a class or kind not made in Canada" as it relates to instruments in the item should also be related to parts. In this connection a spokesman for the Association stated:

"In the Electronics field in Canada parts manufacturers comprise a major and essential segment of the industry. Notable examples of the types of parts we have in mind are resistors, capacitors, tubes and semiconductors. These are examples of parts which would, we expect, be commonly incorporated in electronic apparatus provided for in this Tariff Item." (p. 195)

The spokesman went on to say:

"We do not object to duty free entry of electronic parts which are of a class or kind not made in Canada. However, our Association does feel that Canadian parts manufacturers are entitled to equitable tariff treatment vis-a-vis manufacturers of complete apparatus. We therefore urge that Tariff Item 43150-1 be revised so that the provision for 'parts' in the item is governed by the clause 'of a class or kind not made in Canada'." (p. 195)

Dalcan Equipment Ltd., Calgary, Alberta, a producer of magnetic tapes for use in monitoring geophysical data, made a submission urging that these tapes not be permitted entry under tariff item 43150-1. It is understood that subsequent to the hearing these tapes have been classified elsewhere in the Customs Tariff.

TARIFF ITEM 43155-1The Products, the Users and the Suppliers

Tariff item 43155-1 deals with photogrammetric instruments and equipment for use in the interpretation of photographs and in the preparation of maps and plans from photographs. The item is as follows:

Tariff Item	Goods Subject to Duty and Free Goods	British	Most-	General
		Prefer- ential Tariff	Favoured- Nation Tariff	
43155-1	Photogrammetric instruments and equipment for use in the interpretation of photographs and in the preparation of maps and plans from photographs, including the following: stereoscopes, binoculars for use with stereoscopes, parallax bars, height finders, contour finders, sketchmasters, slotted template equipment and accessories for use with any of the foregoing; stereoscopic plotting instruments and equipment of either optical-mechanical or projector type, including such accessories as plotting and tracing tables whether electrically, mechanically or remotely operated, optical instruments for preparing diapositive plates, voltage regulators and electrical transformers, cooling systems, lamps, spectacles, filters, height gauges, principal point selectors and other components for use with the foregoing equipment; all the foregoing of a class or kind not made in Canada and parts and fitted carrying cases for any of the foregoing ...	Free	5 p.c.	20 p.c.

It will be noted that the item provides for all photogrammetric instruments and equipment which meet the end-use provisions and are of a class or kind not made in Canada.

The item was introduced in the Tariff on April 9, 1952; no changes have since been made. Prior to April 9, 1952, the goods were classified under various tariff items according to their nature or composition.

The photogrammetric equipment under the item is that used for preparing maps and plans from aerial photographs and for interpretation work. Camera equipment, therefore, is excluded.

Although the art of taking photographs for the purpose of making maps dates back to the middle of the 19th Century it was not until the start of the 20th Century that significant progress was made in this work. In the early years, the phototheodolite picture method was used whereby pictures were taken from tripods on the ground, as contrasted with the aerial pictures of today. The maps were drawn from these pictures with the help of simple stereoscope machines. Practically all developments before World War I took place in Europe and were based on apparatus for automatic plotting from phototheodolite pictures.

The entire basis of photogrammetry changed as a result of developments in aerial photography in World War I. Large areas could be covered very rapidly and areas which had been difficult to survey by the former method were now seldom a problem. Because of this new concept the stereoscopic plotting machine, which had been so laboriously developed for terrestrial photography, became obsolete. A universal plotting machine for either terrestrial or aerial photographs dominated most of the period to World War II. By 1945 terrestrial photogrammetry had ceased to be used to any appreciable extent.

Aerial photographic interpretation is, of course, very important for a number of activities. It is performed by geographers, geologists, foresters, soil scientists, engineers, urban planners and a multitude of other specialists, with a view to identifying objects and terrestrial formations and judging their significance. As noted above, the tariff item deals with the apparatus and equipment used for the interpretation of photographs and for the preparation of maps and plans; it excludes equipment for taking the original photographs. The production of maps involves many stages, including planning, field surveys and computation, taking of aerial photographs and the accurate setting up of photographs for interpretation. Photogrammetric compilation is the art of transferring what is on a photograph to a map which then requires inspection and editing to ascertain its accuracy. Other preparatory work is necessary before the map is printed.

The Federal Government, especially the map-making section of the Department of Energy, Mines and Resources, is a larger user of this equipment. The National Research Council also uses the equipment mostly for research purposes. Firms engaged in map and chart making from aerial photographs also are significant users as well as those involved in photographic interpretation. Some universities also use the equipment for teaching and research purposes.

The equipment used in photographic interpretation and in the preparation of maps and charts from aerial photographs must be precise in nature and accurate in design. To produce such goods requires substantial capital investment, research and development and a great deal of craftsmanship. The magnitude of capital outlays and the relatively small demand in Canada appear to account for the absence of production in Canada. The not-made-in-Canada provision of the item, therefore, at least up to the present, has had its greatest significance with respect to the standard goods of the item such as transformers and voltage regulators. Canadian requirements of the photogrammetric instruments and equipment are apparently supplied entirely by imports. The importations are made mostly by distributors or agents, some of which are affiliated with foreign producers. Some distributors have facilities for repairing, overhauling and modifying the products they sell.

The Market

Information on the consumption of the goods provided for in item 43155-1 is not complete; however available information indicates current consumption of about \$600,000 annually, representing imports of the products.

From the Board's survey, which accounted for over 80 per cent of the value of imports in the period October 1, 1965 to September 30, 1966, it was ascertained that the provision for stereoscopic plotting instruments and equipment and accessories therefor accounted for over 75 per cent of the imports; stereoscopes accounted for another 6 per cent. The general provision for photogrammetric instruments and equipment accounted for about 15 per cent of the total. It is under this provision that some of the equipment resulting from technological change is entered. In recent years, this has included stereocomparators and rectifiers of various types.

The imports under tariff item 43155-1 for the period October 1, 1965 to September 30, 1966, by major countries of origin were:

Table (6)

Imports under Tariff Item 43155-1
by Major Countries of Origin,
October 1, 1965 to September 30, 1966

<u>Countries</u>	<u>Total Value \$'000</u>	<u>Free Value \$'000</u>	<u>Dutiable Value \$'000</u>	<u>Duty Collected \$'000</u>	<u>Percentage Supplied %</u>
Switzerland	372	-	372	18	64.1
United States	130	2	128	7	22.4
Germany, Fed. Rep.	32	-	32	2	5.5
Others	<u>46</u>	<u>9</u>	<u>37</u>	<u>2</u>	<u>8.0</u>
Total	580	11	570	29	100.0

Source: Dominion Bureau of Statistics

Switzerland thus supplied nearly two-thirds of the imports under this tariff item and the United States more than one-fifth.

Proposals and Representations

The only proposal made regarding item 43155-1 was by Wild of Canada Limited, a major importer of the goods in the item; the proposal was that no changes be made in the item. In this connection the spokesman for Wild stated:

"Tariff Item 43155-1 dealing in photogrammetric instruments appears to be adequately worded for today's requirements in this specialized field, but in this world of changing technology, new items undoubtedly will be introduced in the future. For the present, however, we do not propose any change in this Tariff Item." (p. 89)

SUMMARY AND CONCLUSIONS

The tariff items in this Reference cover certain precision instruments, apparatus and tools used in four fields of human endeavour. In broad terms, these four fields may be described as metal-working, surveying, prospecting and map-making. Considering the rather special nature of each of these areas, and the limited use of much of the somewhat exotic pieces of equipment, the small number of interested parties appearing at the public hearing was not surprising.

A number of proposals were put forward for changes in the tariff items under review, some for expansion of the scope of the items, but many simply for clarification of wording or to remove some administrative difficulty.

The first item, in the words of tariff item 43125-1, deals with "Machinists' or metal workers' precision tools and measuring instruments". There was no evidence of Canadian production of the tools and instruments provided for in this item. Several proposals were made by importers for expanding the scope or for improving the wording of the item and the Board has adopted some of them, most particularly those for rule clamps and thickness gauges. In general the "h.o.p." provision of the item provides sufficient scope for the importation of new tools and instruments. During the course of the public hearing there was a good deal of discussion of the word "precision". Admittedly, "precision" is a relative term; however, after considering the suggestions put forward and other possibilities, the Board decided to leave matters as they are; the interpretation of the word "precision" does not appear to have been the source of any great difficulty from the standpoint of either the trade or the customs administration.

The 9 per cent rate under the Most-Favoured-Nation Tariff is an odd figure; it seems to have stemmed from a 10 per cent discount from the Intermediate Tariff negotiated in a trade agreement with France in the 1930's. There were no proposals for any change in the rates of duty and several importers of goods from the United Kingdom expressed a strong interest in the maintenance of the existing margin of preference. The existing rate has little effect on most of the users of this equipment. In these circumstances the Board is recommending the continuation of the existing rates of duties under both the British Preferential Tariff and the Most-Favoured-Nation Tariff.

The next two items, 43130-1 and 43130-2, cover the field which we have termed "surveying" -- the heading of item 43130-1 is "Engineers', surveyors' and draftsmen's precision instruments and apparatus". There was no evidence of Canadian production of this equipment. Proposals were made by importers that additional pieces of equipment be named in item 43130-1 and also that provision be made for accessories, attachments and fitted cases; most of these proposals have been adopted in the Board's Recommended Item. The recommended provision for "distance measuring apparatus using light, radio or sound waves" would cover a number of relatively new pieces of equipment such as tellurometers, distomats and also geodimeters.

The latter is a trade name for a type of distance measuring apparatus and the specific reference to it in the existing item has been dropped in the Recommended Item. The recommended provisions for gyro converters, subtense bars, traversing targets, attachments and base plates are intended to provide for equipment some of which has been permitted entry under the existing item as "parts" -- a more specific provision for these goods is considered to be desirable.

There were several proposals that the most-favoured-nation duty be 5 p.c. instead of 9 p.c. and the Board is so recommending. As may be seen in Table (4) of the Report, there have been some exports from the United Kingdom under the item but in the year ending September 30, 1966, the amount of duty alone on imports from most-favoured-nation countries exceeded the value of the imports from the United Kingdom; since there was no evidence of Canadian production of the goods listed in the item and because the United Kingdom interest is so small, the Board considers the Most-Favoured-Nation Tariff might well be reduced to 5 p.c.

Tariff item 43130-2 provides an M.F.N. rate of 5 p.c. on slide rules as a G.A.T.T. Extract from tariff item 43130-1. If the Board's recommended M.F.N. rate of 5 p.c. on item 43130-1 were adopted, item 43130-2 would be unnecessary. The Board was requested to provide a 5 p.c. rate under the Most-Favoured-Nation Tariff on cursors for slide rules; at present, since they are not named in the Extract, cursors are dutiable under the main item as parts of slide rules at 9 p.c. under the Most-Favoured-Nation Tariff. The Board's recommendation would meet this request.

In the third field, prospecting, or more specifically in the words of tariff item 43150-1, "Geophysical surveying precision instruments and equipment for use exclusively in prospecting ...", there were at the hearing four Canadian manufacturers of some of the apparatus. Their principal concern was the tariff on the parts and materials which they import for use in the manufacture of the apparatus in Canada. As long as the apparatus is ruled to be of a class or kind not made in Canada, both the apparatus itself and the parts are entitled to duty-free entry under tariff item 43150-1 upon presentation of the appropriate certificates. However, if a Canadian manufacturer secures a made-in-Canada ruling on a particular instrument then the instrument, and parts for it, become dutiable at rates ranging from 10 p.c. to $22\frac{1}{2}$ p.c. The manufacturers claimed that many of the parts they require are not available from Canadian manufacturers and, although a high percentage of their production is exported, it is not feasible, in many cases, to file duty drawback claims -- the amount per claim may be too small or the parts may have been imported by a third party and the information needed to file a duty drawback claim may not be available.

The four Canadian producers present at the hearing proposed that if duty-free entry of their products into the United States could be negotiated they were prepared to forego tariff protection on such goods entering Canada; in other words they would welcome duty-free entry both ways between Canada and the United States for both the finished instruments and the parts.

In the light of these representations by the producers, the Board is not recommending any change in the duty-free provision of tariff item 43150-1 at this time. The Board is recommending a revision in the wording of the item which would have the effect of expanding its scope and of eliminating the end-use provisions.

The Recommended Item would cover all geophysical precision instruments and equipment of a class or kind not made in Canada; the existing item is restricted to geophysical surveying precision instruments and equipment, of a class or kind not made in Canada, when used for certain specified purposes. The scope of the Recommended Item would, therefore, depend to a great extent on the interpretation of the word "geophysical". The Board has consulted a number of authorities and has secured the views of a number of scientists. Most authorities would place a broad interpretation on the word; for example, Dr. R.J. Uffen, Chairman of the Defence Research Board and Dr. J.M. Harrison, Assistant Deputy Minister, Geosciences, Department of Energy, Mines and Resources, defined a geophysical instrument as "one which provides information on physical or chemical characteristics of the interior of the earth, its surface (including oceans and the waters) and its atmosphere". It is the intention of the Board that the word "geophysical" in Recommended Item III should be interpreted in a broad sense such as this.

In order to facilitate the entry of goods used in the manufacture of such apparatus in Canada, at least while consideration is given to whether or not the proposal of the producers for reciprocal free trade is feasible, the Board is recommending that a temporary tariff item, Recommended Item IV, be introduced for a period of, say three years, either by Statute or by Order-in-Council under the authority of Section 273 of the Customs Act, to provide duty-free entry for articles and materials used in the manufacture of geophysical instruments and apparatus.

The omission of the end-use provision in Recommended Item III, together with the duty-free provision for articles and materials in Recommended Item IV, would remove most of the producers' problems with respect to the presentation of end-use certificates and duty drawback claims.

The final tariff item 43155-1 covers photogrammetric equipment used in map-making and the interpretation of photographs. Only one party, Wild of Canada Ltd., made a proposal respecting this item and that was that there be no change. The photogrammetric equipment covered by the item is used to a large extent by the Federal Government. Although the item is restricted to equipment of a class or kind not made in Canada, this restriction appears to have no direct effect since, at present, no photogrammetric equipment is made in Canada. Because the item is so restricted and because there appear to be no Commonwealth suppliers of such equipment, the Board is recommending that the duty of 5 p.c. under the Most-Favoured-Nation Tariff be eliminated. The Board is also recommending that the list of goods enumerated in the item be eliminated; the list is illustrative only, not exhaustive.

There are two other aspects of this Reference which bear mention. First, several suggestions were made which would have the effect of providing, either in tariff item 43125-1 or 43130-1, for some of the rules and tapes now covered by tariff item 43135-1. The Board did not adopt these suggestions; many such rules and tapes are made in Canada and tariff item 43135-1 was not included specifically in the Minister's letter of reference.

The second matter concerns the rate of duty under the General Tariff. At present in two of the items, 43125-1 and 43130-1, the General tariff rate is 10 p.c.; in tariff item 43150-1 it is 30 p.c., and in tariff item 43155-1 it is 20 p.c. A most-favoured-nation rate of 5 p.c. or 9 p.c. and a General tariff rate of 10 p.c. is not the normal pattern in the Canadian Tariff. The Board is recommending a rate of 20 p.c. under the General Tariff in all of the tariff items.

RECOMMENDED SCHEDULE

That Schedule "A" to the Customs Tariff be amended by striking out tariff items 43125-1, 43130-1, 43130-2, 43150-1, 43155-1 and the enumerations of goods and the rates of duty set out opposite each of these items, and by inserting therein the following items, enumerations of goods and rates of duty:

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
I	<p>Toolmakers', machinists' or metal workers' precision tools and measuring instruments, namely:</p> <p>Bevels; Buttons; Calipers; Clamps, including key seat clamps and rule clamps; Dividers; Gauges, including thickness gauges in roll form; Micrometers; Parallels; Plumb bobs, mercury; Protractors; Punches, automatic centre; Scribers; Speed indicators, hand; Squares; Straight edges; Trammels; Verniers; Vises;</p> <p>Toolmakers', machinists' or metal workers' precision tools and measuring instruments, n.o.p.;</p> <p>Parts of all the foregoing ...</p>	Free	9 p.c.	20 p.c.
II	<p>Engineers', surveyors' or draftsmen's precision instruments and apparatus, namely:</p> <p>Alidades; Altazimuths; Aneroid barometers; Boards, military sketching; Clinometers; Compasses; Cross staff heads;</p>			

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
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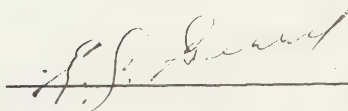
II (Cont'd)

Curves, adjustable, irregular, railroad and ship;				
Curvimeters;				
Dipping needles;				
Distance measuring apparatus using light, radio or sound waves;				
Drafting instruments of all kinds;				
Drafting machines;				
Gyro converters;				
Heliographs;				
Integrators;				
Levels;				
Liners, section;				
Meters, portable for hydraulic engineering;				
Pantographs;				
Parallel rules;				
Parallel ruling attachments;				
Pedometers and paceometers;				
Plane tables, military and topographic;				
Planimeters;				
Poles, ranging;				
Prisms, angle;				
Protractors;				
Rods, levelling;				
Scales, flat and triangular;				
Sextants;				
Slide rules;				
Splines;				
Straight edges;				
Subtense bars;				
Tacheometers;				
Tallying machines, pocket;				
Tee squares;				
Telemeters;				
Theodolites;				
Transits;				
Traversing targets;				
Triangles of all types;				
Parts, attachments, tripods, base plates and fitted cases for all the foregoing ...		Free	5 p.c.	20 p.c.

Tariff Item	Goods Subject to Duty and Free Goods	British Prefer- ential Tariff	Most- Favoured- Nation Tariff	General Tariff
III	Geophysical precision instruments and equipment of a class or kind not made in Canada; Parts, attachments, tripods, base plates and fitted cases for all the foregoing...	Free	Free	20 p.c.
IV	Articles and materials for use in the manufacture and which form part of geophysical precision instruments or equipment, or parts, attach- ments or fitted cases therefor...	Free	Free	20 p.c.
V	Photogrammetric instruments and equipment for use in the interpretation of photographs or in the preparation of maps and plans from photographs; accessories therefor; All the foregoing when of a class or kind not made in Canada; Parts and fitted cases therefor ...	Free	Free	20 p.c.



First Vice-Chairman



Member



Member

Ottawa, May 31, 1967

NOTES ON RECOMMENDED ITEMSRecommended Item I

- I Toolmakers', machinists' or metal workers'
precision tools and measuring instruments,
namely:

Bevels;
Buttons;
Calipers;
Clamps, including key seat clamps
and rule clamps;
Dividers;
Gauges, including thickness gauges
in roll form;
Micrometers;
Parallels;
Plumb bobs, mercury;
Protractors;
Punches, automatic centre;
Scribers;
Speed indicators, hand;
Squares;
Straight edges;
Trammels;
Verniers;
Vises;

Toolmakers', machinists' or metal workers'
precision tools and measuring instruments,
n.o.p.;
Parts of all the foregoing

Free

9 p.c.

20 p.c.

The Recommended Item would provide for all the machinists' or metal workers' precision tools and measuring instruments and parts now classified under tariff item 43125-1 with no change in the rates of duty under either the British Preferential Tariff or the Most-Favoured-Nation Tariff. A 20 p.c. General tariff rate is recommended in all the items in the Reference.

Imports under the Most-Favoured-Nation Tariff of item 43125-1 were valued at about \$4.7 million during the period October 1, 1965 to September 30, 1966; those under the British Preferential Tariff were valued at about \$792,000. There were no imports under the General Tariff during the period.

The Board is recommending the deletion of the specific provision for unfinished parts; it is understood that the provision is no longer necessary. The provision for "gauge blocks" has been deleted since "gauge blocks" are a type of gauge and would be entitled to entry under the Recommended Item as "gauges". The restriction "for precision work" as it applies to clamps and vises has been deleted because the general description of the item contains the same restriction. The word "metal" as it applies to protractors and squares has been dropped.

In addition to providing for the goods in the existing item the Recommended Item would attract thickness gauges in roll form and rule clamps; these goods are now classified according to their nature or composition, mostly under tariff item 44603-1 at 10 p.c., B.P. and 22½ p.c., M.F.N. The value of imports of these products is not known but is believed to be small.

The addition of the word "toolmakers" in the caption of the Recommended Item is for the purpose of clarification and does not expand the scope of the item.

Recommended Item II

II Engineers', surveyors' or draftsmen's
precision instruments and apparatus,
namely:

- Alidades;
- Altazimuths;
- Aneroid barometers;
- Boards, military sketching;
- Clinometers;
- Compasses;
- Cross staff heads;
- Curves, adjustable, irregular,
railroad and ship;
- Curvimeters;
- Dipping needles;
- Distance measuring apparatus
using light, radio or sound waves;
- Drafting instruments of all kinds;
- Drafting machines;
- Gyro converters;
- Heliographs;
- Integrators;
- Levels;
- Liners, section;
- Meters, portable for hydraulic
engineering;
- Pantographs;
- Parallel rules;
- Parallel ruling attachments;
- Pedometers and paceometers;
- Plane tables, military and
topographic;
- Planimeters;
- Poles, ranging;
- Prisms, angle;
- Protractors;
- Rods, levelling;
- Scales, flat and triangular;
- Sextants;
- Slide rules;
- Splines;
- Straight edges;
- Subtense bars;

II (Cont'd)

Tacheometers;
 Tallying machines, pocket;
 Tee squares;
 Telemeters;
 Theodolites;
 Transits;
 Traversing targets;
 Triangles of all types;
 Parts, attachments, tripods, base plates and
 fitted cases for all the foregoing

Free

5 p.c.

20 p.c.

The Recommended Item would provide for all the engineers', surveyors' and draftsmen's precision instruments and apparatus, parts and tripods now classified under tariff item 43130-1 with no change in the rate of duty under the British Preferential Tariff and with a decrease of 4 p.c. in the most-favoured-nation rate. For uniformity a 20 p.c. rate is recommended under the General Tariff.

Imports under the Most-Favoured-Nation Tariff were valued at \$3.1 million during the period October 1, 1965 to September 30, 1966; those under the British Preferential Tariff were valued at \$264,000; imports under the General Tariff were valued at \$45,000.

The Recommended Item provides for gyro converters, subtense bars, traversing targets, as well as for attachments and base plates for the instruments and apparatus in the item; most of these goods are at present classified elsewhere in the Customs Tariff at higher rates of duty.

Fitted cases for the instruments and apparatus would also be classified under the Recommended Item. At present only the carrying cases containing the instruments and apparatus are allowed under tariff item 43130-1; fitted cases imported separately are classified according to material or composition. The provision for "fitted cases" has been deleted from the existing provision for "drafting instruments of all kinds, including fitted cases containing the same". The provision would become superfluous because of the recommended general provision for fitted cases.

The provision for "geodimeters" was dropped from the item because "geodimeter" is a trade name; these instruments would, however, be classified under the recommended provision for "distance measuring apparatus using light, radio or sound waves". This recommended provision would also provide for other products such as those known under the trade names of "distomat" and "tellurometer". These products are classified elsewhere in the Customs Tariff, for example under item 44532-1 (Free, B.P. and $7\frac{1}{2}$ p.c., M.F.N.) and item 44510-1 (Free, B.P. and 20 p.c., M.F.N.). The new provision would mean a decrease in the rates of duty payable on such goods when imported under the Most-Favoured-Nation Tariff.

The deletion of the words "surveying instruments" following altazimuth, "engineering, military and surveying" following aneroid barometers, "tripod and hand or pocket types" following levels and

transits, "box" following sextants and "steel or wooden" following straight edges and tee squares is recommended because such restrictive descriptions seem unnecessary. Some of the suggested deletions would have the effect of expanding the scope of the item to include goods now dutiable elsewhere in the Customs Tariff provided they meet the restrictions contained in the general heading of the item.

At present slide rules are classified under item 43130-2 at 5 p.c. when imported under the Most-Favoured-Nation Tariff, whereas parts for slide rules, including cursors, are classified under item 43130-1 at 9 p.c. under the Most-Favoured-Nation Tariff. Both the slide rules and the parts would be attracted to Recommended Item II at 5 p.c. under the Most-Favoured-Nation Tariff.

Recommended Item III

- III Geophysical precision instruments and equipment of a class or kind not made in Canada;
Parts, attachments, tripods, base plates and fitted cases for all the foregoing

Free

Free

20 p.c.

The Recommended Item provides for the geophysical instruments and equipment now classified under item 43150-1; it continues the duty-free provisions under the British Preferential Tariff and Most-Favoured-Nation Tariff. For uniformity a 20 p.c. rate is recommended under the General Tariff. The Recommended Item also carries the same rates of duty under the British Preferential and Most-Favoured-Nation Tariffs as tariff item 49105-1 which has a similar provision for some of this equipment.

In the Recommended Item the Board has dropped the word "surveying" as well as the end-use provisions. It is the intention of the Board that the item should cover all geophysical precision instruments and equipment of a class or kind not made in Canada, regardless of the use to which they may be put. The scope of the item, therefore, will depend largely upon the interpretation of the word "geophysical". While some of those consulted would confine the meaning of the word to a study of the properties of the land surface of the earth and its interior, most authorities interpret the word in a broad sense; as pointed out in the Summary and Conclusions it is the intention of the Board that the word should be interpreted in the broad sense.

The Board is not recommending continuation of the listing of certain types of equipment in the item; the list was not restrictive but only illustrative.

During the period October 1, 1965 to September 30, 1966, imports under the Most-Favoured-Nation Tariff were valued at about \$5 million; those under the British Preferential Tariff were valued at \$148,000. There were no imports under the General Tariff.

Recommended Item IV

IV Articles and materials for use in the manufacture and which form part of geophysical precision instruments or equipment, or parts, attachments or fitted cases therefor

Free

Free

20 p.c.

As noted in the Summary and Conclusions the Board recommends that this item be introduced on a temporary basis to provide for the duty-free entry, under the British Preferential and Most-Favoured-Nation Tariffs, of articles and materials which enter into the construction and form part of geophysical equipment whether or not such equipment is deemed to be "of a class or kind not made in Canada"; parts would also be allowed under the item as articles. Articles and materials for use in the manufacture of parts, attachments or fitted cases for this geophysical equipment would also be attracted to the item.

At present, parts for geophysical equipment provided for in tariff item 43150-1 are allowed under that item and in this respect there is no change in the rates of duty under both the British Preferential and Most-Favoured-Nation Tariff. Imports of such parts for the period October 1, 1965 to September 30, 1966, are estimated at about \$300,000.

However, unless the end-use can be established at the time of importation Canadian producers of the geophysical equipment are required to pay duty on production parts. Subsequently, upon presentation of end-use certificates or proof of export the duties are refunded. The Board considers this procedure, which is both time-consuming and costly, unnecessary in this case; under Recommended Item IV such production parts as well as other relevant articles and materials would enter duty-free.

Sodium iodide crystals and possibly certain other goods allowed under tariff item 43150-1 would be classified under the Recommended Item with no change in the existing rates of duty under the British Preferential and Most-Favoured-Nation Tariffs. There is no information on imports of sodium iodide crystals; although such crystals are still in use, imports are believed to be small.

The Board received representations from Huntex Limited, Toronto, for a duty-free provision for internal combustion engines which the company uses in the production of portable generators used with certain types of geophysical equipment. If the portable generators are considered by the Customs authorities to be "attachments" then the engines would qualify for entry under the Recommended Item; on the other hand, if the portable generators are not considered to be "attachments", the Board is of the opinion that this request might best be considered under the authority of Section 273 of the Customs Act. The Tariff now accords such special treatment for some types of engines used in Canadian production, see tariff items 42845-1, 42850-1 and 43875-1 for examples.

Recommended Item V

- V Photogrammetric instruments and equipment
 for use in the interpretation of photographs or in the preparation of maps and plans from photographs;
 accessories therefor;
 All the foregoing when of a class or kind
 not made in Canada;
 Parts and fitted cases therefor

Free

Free

20 p.c.

The Recommended Item would provide for all the photogrammetric instruments and equipment, parts and fitted cases now classified under tariff item 43155-1 with no change in the British Preferential and General Tariffs, but the 5 p.c. duty under the Most-Favoured-Nation Tariff would be eliminated.

Imports which were dutiable at the most-favoured-nation rate of 5 p.c. were valued at \$539,000 during the period October 1, 1965 to September 30, 1966. In the same period duty-free imports under the British Preferential Tariff as well as those under the General Tariff, were small.

The Board is recommending the deletion of the listing of certain photogrammetric instruments and equipment; such a listing is illustrative only and appears to be unnecessary.

NOTES ON EXISTING ITEMS

relating to certain precision instruments and apparatus

Existing Item 43125-1 (GATT)

43125-1 Machinists' or metal workers' precision tools and measuring instruments, viz.:— Calipers, micrometers, metal protractors and squares, bevels, verniers, gauges, gauge blocks, parallels, buttons, mercury plumb bobs, dividers, trammels, scribes, automatic centre punches, hand speed indicators, straight edges, key seat clamps and other clamps and vises used by toolmakers for precision work, precision tools and measuring instruments, n.o.p.; parts of all the foregoing, finished or not

Free

9 p.c.

10 p.c.

The goods now classified under item 43125-1, are provided for in Recommended Item I with continuing duty-free entry under the British Preferential Tariff and with no change in the most-favoured-nation tariff rate of 9 p.c.

During the period October 1, 1965 to September 30, 1966, imports under the item amounted to about \$5.5 million of which about \$4.7 million were entered at 9 p.c. under the Most-Favoured-Nation Tariff. The United States supplied 75.2 per cent of the imports while Japan, the Federal Republic of Germany and Switzerland, together supplied 8.7 per cent. Imports entered under the British Preferential Tariff, nearly all from Britain, amounted to \$792,000 and represented 14.4 per cent of the imports. There were no imports under the General Tariff.

Existing Item 43130-1 (GATT)

43130-1 Engineers', surveyors' and draftsmen's precision instruments and apparatus, namely:

Alidades;
 Altazimuth surveying instruments;
 Aneroid barometers, engineering,
 military and surveying;
 Boards, military sketching;
 Clinometers;
 Compasses;
 Cross staff heads;
 Curves, adjustable, irregular,
 railroad and ship;
 Curvimeters;
 Dipping needles;
 Drafting instruments of all kinds,
 including fitted cases containing the same;
 Drafting machines;
 Geodimeters;
 Heliographs;

43130-1 (Cont'd)

Integrators;
 Levels, tripod and hand or pocket types;
 Liners, section;
 Meters, portable for hydraulic engineering;
 Pantographs;
 Parallel rules;
 Parallel ruling attachments;
 Pedometers and paceometers;
 Plane tables, military and topographic;
 Planimeters;
 Poles, ranging;
 Prisms, angle;
 Protractors;
 Rods, levelling;
 Scales, flat and triangular;
 Sextants, box;
 Slide rules;
 Splines;
 Straight edges, steel or wooden;
 Tacheometers;
 Tallying machines, pocket;
 Tee squares, steel or wooden;
 Telemeters;
 Theodolites;
 Transits, tripod and hand or pocket types;
 Triangles of all types;
 Tripods for use with any of the foregoing
 instruments;
 Parts of all the foregoing

Free

9 p.c.

10 p.c.

All the goods now classified under item 43130-1 are provided for in Recommended Item II with continuing duty-free entry under the British Preferential Tariff and with a reduction in the most-favoured-nation tariff rate to 5 p.c.

During the period October 1, 1965 to September 30, 1966, imports under the item amounted to about \$3.4 million of which about \$3.1 million were entered at 9 p.c. under the Most-Favoured-Nation Tariff. The United States supplied 38.5 per cent of all imports while the Federal Republic of Germany supplied 22.1 per cent. Switzerland, Japan and Sweden together supplied 27.6 per cent. Imports entered under the British Preferential Tariff, nearly all from Britain, amounted to \$264,000 and represented 7.7 per cent of the total. Imports entered at 10 per cent under the General Tariff, all from East Germany, amounted to \$45,000 and accounted for only 1.3 per cent of all imports.

Existing Item 43130-2 (GATT)

43130-2 GATT
 Slide rules

5 p.c.

43130-2 (Cont'd)

Tariff item 43130-2 is an Extract from tariff item 43130-1 and provides a special most-favoured-nation tariff rate of 5 p.c., under a GATT agreement, for slide rules provided for in item 43130-1.

The slide rules classified under item 43130-2 are provided for in Recommended Item II with no change in the rate of duty.

During the period October 1, 1965 to September 30, 1966, imports under the item amounted to about \$306,000. The United States supplied 37.9 per cent of the imports; Japan and the Federal Republic of Germany supplied 26.1 per cent and 22.2 per cent, respectively; the remaining 13.8 per cent originated from six other countries.

Existing Item 43150-1 (GATT)

43150-1 Geophysical surveying precision instruments and equipment for use exclusively in prospecting for, or in the exploration and development of, petroleum, natural gas, water wells and minerals, or for geophysical studies for engineering projects, including the following: Magnetometers; gravity meters and other instruments designed to measure the elements, variations and distortions of the natural gravitational force; field potentiometers, meggers, non-polarizing electrodes, and electrical equipment for making measurements in drill holes; instruments and equipment for seismic prospecting; geiger muller counters and other instruments for radioactive methods of geophysical prospecting; electrical and electronic amplifying devices and electrical thermostats designed to be used with any of the foregoing; sodium iodide crystals, thallium activated, in rough cut blanks, when imported to be manufactured into parts for use in instruments for prospecting; all the foregoing of a class or kind not made in Canada, and parts, tripods and fitted carrying cases for any of the foregoing

Free

Free

30 p.c.

The instruments and equipment now classified under item 43150-1 are provided for in Recommended Item III with continued duty-free entry under both the British Preferential and Most-Favoured-Nation Tariffs (see note on Recommended Item III).

Imports of "sodium iodide crystals" and possibly some other goods now classified under the item would be provided for in Recommended Item IV with continuing duty-free entry under the British Preferential and Most-Favoured-Nation Tariffs.

During the period October 1, 1965 to September 30, 1966, imports under the item amounted to \$5.2 million of which about \$5 million were entered duty-free under the Most-Favoured-Nation Tariff. The United States supplied 95.1 per cent of all imports while the other countries entitled to the benefits of the Most-Favoured-Nation Tariff supplied 2 per cent. Duty-free imports under the British Preferential Tariff, all from Britain, amounted to \$148,000 and represented 2.9 per cent of the imports. There were no imports under the General Tariff.

Existing Item 43155-1

43155-1 Photogrammetric instruments and equipment for use in the interpretation of photographs and in the preparation of maps and plans from photographs, including the following: stereoscopes, binoculars for use with stereoscopes, parallax bars, height finders, contour finders, sketch-masters, slotted template equipment and accessories for use with any of the foregoing; stereoscopic plotting instruments and equipment of either optical-mechanical or projector type, including such accessories as plotting and tracing tables whether electrically, mechanically or remotely operated, optical instruments for preparing diapositive plates, voltage regulators and electrical transformers, cooling systems, lamps, spectacles, filters, height gauges, principal point selectors and other components for use with the foregoing equipment; all the foregoing of a class or kind not made in Canada and parts and fitted carrying cases for any of the foregoing

Free

5 p.c.

20 p.c.

All the goods now classified under item 43155-1 are provided for in Recommended Item V with continued duty-free entry under the British Preferential Tariff and with the elimination of the 5 p.c. rate under the Most-Favoured-Nation Tariff.

During the period October 1, 1965 to September 30, 1966, imports under the item amounted to about \$580,000 of which \$539,000 were entered at 5 p.c. under the Most-Favoured-Nation Tariff. Switzerland supplied 64.1 per cent of all imports and the United States 22.4 per cent. The rest of the countries entitled to the benefits of the Most-Favoured-Nation Tariff supplied about 8 per cent. Imports under the British Preferential Tariff and under the General Tariff were small.

APPENDIX IIMPORT STATISTICS

Imports: Engineers', surveyors', draftmen's, machinists' or metal workers' precision tools and measuring instruments, geophysical surveying instruments, and parts, as enumerated in tariff items 431c and 431d; photogrammetric instruments for use in the interpretation of photographs and in the preparation of maps from photographs, s.c. 5629(a)

Tariff Items 43125-1, 43130-1, 43130-2, 43150-1 and 43155-1

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Imports</u> \$	<u>Duty Collected</u> \$	<u>Duty as p.c. of Dutiable Value</u>
<u>1. Total</u>				
1948	1,657,534	1,369,786	129,976	9.5
1949	2,053,356	1,513,432	136,299	9.0
1950	2,487,721	1,709,444	154,131	9.0
1951 (b)	3,159,328	2,274,148	205,497	9.0
1952	5,427,717	3,500,847	311,773	8.9
1953	6,390,567	3,936,757	346,195	8.8
1954	5,332,483	3,216,738	281,696	8.8
1955	5,747,604	3,507,611	309,984	8.8
1956	5,608,886	4,109,139	361,115	8.8
1957	7,084,642	4,098,792	358,830	8.8
1958	6,626,857	3,075,352	267,458	8.7
1959	6,624,273	3,350,075	285,422	8.5
1960	5,838,197	3,246,734	282,590	8.7
1961	6,174,550	3,686,144	315,319	8.6
1962	7,206,857	4,113,306	357,067	8.7
1963	8,872,665	4,990,231	435,439	8.7

2. United Kingdom

1948	155,291	486	44	9.1
1949	180,372	8,801	792	9.0
1950	256,038	171	17	9.9
1951 (b)	422,445	52	5	9.6
1952	741,598	234	21	9.0
1953	663,591	306	28	9.2
1954	382,822	1,365	125	9.2
1955	327,066	1,127	102	9.1
1956	481,630	1,666	128	7.7
1957	453,513	173	16	9.2
1958	397,449	1,033	93	9.0
1959	472,156	1,106	75	6.8
1960	361,489	1,463	202	13.8
1961	473,641	4,083	446	10.9
1962	568,456	11,547	1,290	11.2
1963	851,292	7,395	648	8.8

(a) Beginning in 1964 included in various statistical classes

(b) Prior to 1952 s.c. 5629 was: "Engineers's, surveyors', draftsmen's, machinists' or metal-workers' precision tools and measuring instruments, geophysical surveying instruments, and parts, as enumerated in tariff items 431c and 431d"

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Imports</u> \$	<u>Duty Collected</u> \$	<u>Duty as p.c. of Dutiable Value</u>
<u>3. United States</u>				
1948	1,397,222	1,264,602	119,400	9.4
1949	1,750,230	1,410,103	126,945	9.0
1950	1,979,788	1,472,948	132,634	9.0
1951 (b)	2,407,152	1,970,253	177,297	9.0
1952	4,165,299	3,047,037	270,370	8.9
1953	5,124,183	3,400,727	300,207	8.8
1954	4,333,566	2,639,909	232,784	8.8
1955	4,581,083	2,709,410	241,524	8.9
1956	3,958,582	2,983,574	264,219	8.9
1957	5,218,599	2,750,981	243,516	8.9
1958	5,272,948	2,201,817	190,944	8.7
1959	4,961,087	2,249,993	198,653	8.8
1960	4,483,528	2,308,020	203,440	8.8
1961	4,462,757	2,490,344	214,792	8.6
1962	5,045,188	2,611,778	231,396	8.9
1963	6,224,490	3,259,347	293,203	9.0

4. Germany (c)

1948	3,138	3,138	293	9.3
1949	34,710	34,710	3,124	9.0
1950	59,757	59,757	5,378	9.0
1951 (b)	116,386	114,766	10,333	9.0
1952	234,392	190,164	16,985	8.9
1953	175,235	171,921	15,193	8.8
1954	240,082	239,370	21,322	8.9
1955	354,937	353,378	31,517	8.9
1956	500,147	497,773	43,973	8.8
1957	487,337	487,210	43,303	8.9
1958	484,491	476,448	42,353	8.9
1959	445,051	418,708	36,720	8.8
1960	431,905	419,210	36,823	8.8
1961	554,875	546,297	48,260	8.8
1962	642,597	621,704	54,747	8.8
1963	709,695	685,166	60,172	8.8

(c) Beginning in 1952, Federal Republic of Germany only

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Imports</u> \$	<u>Duty Collected</u> \$	<u>Duty as p.c. of Dutiable Value</u>
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5. Japan

1948	20,160	20,160	2,716	13.5
1949	3,746	3,746	375	10.0
1950	21,083	21,083	2,108	10.0
1951	84,700	84,700	8,470	10.0
1952	65,821	65,821	6,632	10.1
1953	73,203	73,203	7,320	10.0
1954	79,213	79,213	7,227	9.1
1955	132,412	130,661	11,474	8.8
1956	191,186	191,186	16,813	8.8
1957	156,575	156,575	13,574	8.7
1958	127,599	127,599	10,694	8.4
1959	136,547	136,547	10,942	8.0
1960	105,262	105,262	8,669	8.2
1961	158,417	158,417	13,009	8.2
1962	179,149	179,149	14,702	8.2
1963	270,251	267,008	22,259	8.3

6. Sweden

1948	891	891	84	9.4
1949	5,079	556	50	9.0
1950	55,897	43,929	3,954	9.0
1951	30,150	18,415	1,657	9.0
1952	71,541	52,452	4,719	9.0
1953	106,309	72,971	6,566	9.0
1954	44,607	24,739	2,227	9.0
1955	73,769	37,601	3,383	9.0
1956	71,051	33,506	3,012	9.0
1957	71,277	30,600	2,744	9.0
1958	34,259	16,064	1,446	9.0
1959	57,860	20,522	1,871	9.1
1960	53,737	38,218	3,432	9.0
1961	41,669	38,153	3,426	9.0
1962	77,237	58,852	5,297	9.0
1963	92,183	89,777	8,264	9.2

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Imports</u> \$	<u>Duty Collected</u> \$	Duty as p.c. of Dutiable <u>Value</u>
<u>7. Switzerland</u>				
1948	78,452	78,452	7,184	9.2
1949	51,344	51,344	4,630	9.0
1950	111,652	109,405	9,846	9.0
1951 (b)	82,925	82,675	7,439	9.0
1952	130,695	127,290	11,446	9.0
1953	222,174	192,818	14,967	7.8
1954	216,498	212,975	15,921	7.5
1955	259,464	259,464	20,606	7.9
1956	349,496	349,136	28,457	8.2
1957	625,038	624,976	51,817	8.3
1958	227,060	226,275	19,677	8.7
1959	430,941	429,167	30,170	7.0
1960	296,480	296,018	23,194	7.8
1961	361,747	361,377	28,044	7.8
1962	497,164	486,264	36,242	7.5
1963	564,758	554,195	39,482	7.1

8. France

1948	598	598	56	9.4
1949	1,909	1,909	172	9.0
1950	1,748	1,702	153	9.0
1951 (b)	1,837	1,837	165	9.0
1952	4,262	4,262	379	8.9
1953	2,683	2,683	241	9.0
1954	3,129	3,129	278	8.9
1955	2,115	2,115	188	8.9
1956	8,444	8,444	760	9.0
1957	19,715	18,504	1,665	9.0
1958	5,854	5,854	524	9.0
1959	16,000	15,615	1,405	9.0
1960	70,004	50,092	4,510	9.0
1961	42,519	41,543	3,496	8.4
1962	65,400	57,984	5,223	9.0
1963	31,129	29,736	2,668	9.0

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Imports</u> \$	<u>Duty Collected</u> \$	<u>Duty as p.c. of Dutiable Value</u>
<u>9. Italy</u>				
1948	145	145	13	9.0
1949	379	379	34	9.0
1950	-	-	-	-
1951	95	95	9	9.5
1952	(b) 4,507	4,507	402	8.9
1953	1,702	1,702	147	8.6
1954	3,370	3,370	303	9.0
1955	3,648	3,648	328	9.0
1956	21,830	21,830	1,965	9.0
1957	6,882	6,882	619	9.0
1958	45,395	7,562	681	9.0
1959	42,863	42,765	2,303	5.4
1960	11,701	11,701	1,025	8.8
1961	18,058	18,058	1,628	9.0
1962	29,195	29,195	2,875	9.8
1963	48,352	48,352	4,339	9.0

10. Netherlands

1948	-	-	-	-
1949	657	657	59	9.0
1950	-	-	-	-
1951	669	669	60	9.0
1952	3,580	3,580	322	9.0
1953	14,082	14,082	1,012	7.2
1954	14,489	14,489	914	6.3
1955	1,866	1,866	170	9.1
1956	1,183	1,183	104	8.8
1957	5,650	5,650	402	7.1
1958	1,467	1,467	132	9.0
1959	4,187	2,649	212	8.0
1960	2,540	1,968	124	6.3
1961	5,600	5,600	504	9.0
1962	3,629	3,629	285	7.9
1963	16,072	16,072	1,419	8.8

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Imports</u> \$	<u>Duty Collected</u> \$	<u>Duty as p.c. of Dutiable Value</u>
<u>11. Denmark</u>				
1948	-	-	-	-
1949	-	-	-	-
1950	-	-	-	-
1951	(b) 585	585	53	9.1
1952	3,640	3,640	311	8.5
1953	3,987	3,987	299	7.5
1954	4,205	4,205	327	7.8
1955	5,913	5,913	473	8.0
1956	15,760	15,152	1,172	7.7
1957	15,742	15,742	1,039	6.6
1958	8,370	7,912	599	7.6
1959	5,995	5,995	484	8.1
1960	7,331	7,331	488	6.7
1961	12,023	12,023	780	6.5
1962	14,476	14,476	1,113	7.7
1963	12,277	12,277	944	7.7

12. Germany, Eastern

1952	1,860	1,860	186	10.0
1953	289	289	29	10.0
1954	-	-	-	-
1955	-	-	-	-
1956	-	-	-	-
1957	-	-	-	-
1958	1,630	1,630	163	10.0
1959	15,642	15,642	1,564	10.0
1960	836	836	84	10.0
1961	55	55	17	30.9
1962	9,825	9,825	982	10.0
1963	6,470	6,470	649	10.0

13. Belgium and Luxembourg

1953	1,752	1,752	158	9.0
1954	-	-	-	-
1955	-	-	-	-
1956	235	235	21	8.9
1957	229	229	21	9.2
1958	12,812	-	-	-
1959	160	76	7	9.2
1960	52	-	-	-
1961	21,583	236	21	8.9
1962	30,146	368	33	9.0
1963	27,331	-	-	-

APPENDIX II

TARIFF HISTORY

Tariff HistoryTariff Item 43125-1 (GATT) - Previously 431c

Machinists' or metal workers' precision tools and measuring instruments, viz.:— Calipers, micrometers, metal protractors and squares, bevels, verniers, gauges, gauge blocks, parallels, buttons, mercury plumb bobs, dividers, trammels, scribes, automatic centre punches, hand speed indicators, straight edges, key seat clamps and other clamps and vises used by toolmakers for precision work, precision tools and measuring instruments, n.o.p.; parts of all the foregoing, finished or not

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1948, May 19	Free	9 p.c.	10 p.c.
1948, January 1 (GATT)		10 p.c.	
1944, June 27	Free	10 p.c.	15 p.c.

Prior to June 27, 1944, hand speed indicators, other than the pocket type, were not included in the item. These goods were classified as speedometers under tariff item 462 at the rates of 7½ p.c. under the British Preferential Tariff and 25 p.c. under the Most-Favoured-Nation Tariff (see history of tariff item 43150-1 which includes, in part, the history of item 462). Also the item did not provide for parts, whether or not finished; such parts were classified according to their nature or composition. The item provided for all centre punches whether or not of the automatic type.

1939, January 1 (United States Trade Agreement)		10 p.c.	
1936, May 2	Free	10 p.c.	15 p.c.

Prior to May 2, 1936, the item was as follows:— Precision tools, viz.: combination squares, slide calipers, micrometers, depth thickness or screw pitch gauges, rules, and measuring tapes of metal

Most precision tools and measuring instruments not provided for in the item were classified under tariff item 462 at rates of 15 p.c. under the British Preferential Tariff and 25 p.c. under the Most-Favoured-Nation Tariff (see history of tariff item 43150-1).

1930, May 2	15 p.c.	25 p.c.	30 p.c.
-------------	---------	---------	---------

Prior to May 2, 1930, the goods were mostly dutiable as mathematical instruments under tariff item 657, viz.:— Magic lanterns and slides therefor, philosophical, photographic, mathematical and optical instruments, n.o.p., cyclometers and pedometers, and tape lines of any material

1906, November 30	17½ p.c.	22½ p.c.	25 p.c.
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Tariff Item 43130-1 (GATT) - Previously 431d

Engineers', surveyors' and draftsmen's precision instruments and apparatus, namely:

- Alidades;
- Altazimuth surveying instruments;
- Aneroid barometers, engineering, military and surveying;
- Boards, military sketching;
- Clinometers;
- Compasses;
- Cross staff heads;
- Curves, adjustable, irregular, railroad and ship;
- Curvimeters;
- Dipping needles;
- Drafting instruments of all kinds, including fitted cases containing the same;
- Drafting machines;
- Geodimeters;
- Heliographs;
- Integrators;
- Levels, tripod and hand or pocket types;
- Liners, section;
- Meters, portable for hydraulic engineering;
- Pantographs;
- Parallel rules;
- Parallel ruling attachments;
- Pedometers and paceometers;
- Plane tables, military and topographic;
- Planimeters;
- Poles, ranging;
- Prisms, angle;
- Protractors;
- Rods, levelling;
- Scales, flat and triangular;
- Sextants, box;
- Slide rules;
- Splines;
- Straight edges, steel or wooden;
- Tacheometers;
- Tallying machines, pocket;
- Tee squares, steel or wooden;
- Telemeters;
- Theodolites;
- Transits, tripod and hand or pocket types;
- Triangles of all types;
- Tripods for use with any of the foregoing instruments;
- Parts of all the foregoing

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1958, June 18	Free	9 p.c.	10 p.c.

Prior to June 18, 1958, the provision for parts in the item was "parts of all the foregoing, finished or not"

1957, April 15 (GATT) - Slide rules, only (now tariff item 43130-2)		5 p.c.	
1957, March 15	Free	9 p.c.	10 p.c.

Tariff item 43130-1 (GATT) - Previously 431d
(Cont'd)

Prior to March 15, 1957, the item did not provide for geodimeters. These goods were classified under tariff item 445n free of duty under the British Preferential Tariff and at a rate of $7\frac{1}{2}$ p.c. under the Most-Favoured-Nation Tariff.

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1952, January 20 (GATT) - Slide rules, only (now tariff item 43130-2)		$7\frac{1}{2}$ p.c.	
1948, May 19	Free	9 p.c.	10 p.c.
1948, January 1 (GATT)		10 p.c.	
1944, June 27	Free	10 p.c.	15 p.c.

Prior to June 27, 1944, the item did not provide for parts whether or not finished; parts were classified under various tariff items according to their nature or composition.

1939, January 1 (United States Trade Agreement)		10 p.c.	
1936, May 2	Free	10 p.c.	15 p.c.

Prior to May 2, 1936, most of the goods were classified under tariff item 462 at rates of 15 p.c. under the British Preferential Tariff and 25 p.c. under the Most-Favoured-Nation Tariff.

Tariff Item 43130-2 - Previously a GATT Extract of Item 431d

Slide rules

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1957, April 15 (GATT)		5 p.c.	
1952, January 20 (GATT)		$7\frac{1}{2}$ p.c.	

The GATT Extract of item 431d, applying to slide rules imported under the Most-Favoured-Nation Tariff, was introduced on January 20, 1952. Prior to that date slide rules, when imported under the Most-Favoured-Nation Tariff, were dutiable at the rate specified by tariff item 431d (see history of tariff item 43130-1).

Tariff Item 43150-1 (GATT) - Previously 431h

Geophysical surveying precision instruments and equipment for use exclusively in prospecting for, or in the exploration and development of, petroleum, natural gas, water wells and minerals, or for geophysical studies for engineering projects, including the following: Magnetometers; gravity meters and other instruments designed to measure the elements, variations and distortions of the natural gravitational force; field potentiometers, meggers, non-polarizing electrodes, and electrical equipment for making measurements in drill holes; instruments and equipment for seismic prospecting; geiger muller counters and other instruments for radioactive methods of

Tariff Item 43150-1 (GATT) - Previously 431h
 (Cont'd)

geophysical prospecting; electrical and electronic amplifying devices and electrical thermostats designed to be used with any of the foregoing; sodium iodide crystals, thallium activated, in rough cut blanks, when imported to be manufactured into parts for use in instruments for prospecting; all the foregoing of a class or kind not made in Canada, and parts, tripods and fitted carrying cases for any of the foregoing

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1963, June 14	Free	Free	30 p.c.

Prior to June 14, 1963, the provision for parts in the item referred only to repair parts. Other parts for the instruments and equipment in the item were classified under various tariff items according to their nature or composition.

1954, April 7	Free	Free	30 p.c.
---------------	------	------	---------

Prior to April 7, 1954, the item did not include sodium iodide crystals, thallium activated, in rough cut blanks, when imported to be manufactured into parts for use in instruments for prospecting. These goods were classified under tariff item 711 at the rates of 15 p.c. under the British Preferential Tariff and 20 p.c. under the Most-Favoured-Nation Tariff.

1951, June 6 (GATT)		Free	
1948, May 19	Free	Free	30 p.c.

Prior to May 19, 1948, apart from certain provisions introduced by Order in Council by authority of the War Measures Act, most of the goods were dutiable under tariff item 462, viz.:—
Philosophical, photographic, mathematical and optical instruments, n.o.p.; speedometers, cyclometers and pedometers, n.o.p.; complete parts of all the foregoing

1948, January 1 (GATT)	2½ p.c.	15 p.c.	
1939, January 1 (United States Trade Agreement)		17½ p.c.	
1937, February 26	7½ p.c.	25 p.c.	30 p.c.
1936, May 2	15 p.c.	25 p.c.	30 p.c.

Prior to May 2, 1936, the item was as follows:—
Philosophical, photographic, mathematical and optical instruments, n.o.p.; speedometers, cyclometers and pedometers and tape lines of any material, n.o.p.; complete parts of all the foregoing

1930, May 2	15 p.c.	25 p.c.	30 p.c.
-------------	---------	---------	---------

Prior to May 2, 1930, mathematical and optical instruments, n.o.p., were classified under item 657, viz.:— Magic lanterns and slides therefor, philosophical, photographic, mathematical and optical instruments, n.o.p., cyclometers and pedometers, and tape lines of any material

Tariff Item 43150-1 (GATT) - Previously 431h
(Cont'd)

Complete parts of mathematical and optical instruments, n.o.p., were classified under various tariff items according to their nature or composition.

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1906, November 30	17½ p.c.	22½ p.c.	25 p.c.

Tariff Item 43155-1 - Previously 431j

Photogrammetric instruments and equipment for use in the interpretation of photographs and in the preparation of maps and plans from photographs, including the following: stereoscopes, binoculars for use with stereoscopes, parallax bars, height finders, contour finders, sketchmasters, slotted template equipment and accessories for use with any of the foregoing; stereoscopic plotting instruments and equipment of either optical-mechanical or projector type, including such accessories as plotting and tracing tables whether electrically, mechanically or remotely operated, optical instruments for preparing diapositive plates, voltage regulators and electrical transformers, cooling systems, lamps, spectacles, filters, height gauges, principal point selectors and other components for use with the foregoing equipment; all the foregoing of a class or kind not made in Canada and parts and fitted carrying cases for any of the foregoing

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1952, April 9	Free	5 p.c.	20 p.c.

Prior to April 9, 1952, the goods were classified under various tariff items according to their nature or composition.



CANADA

Report by **THE TARIFF BOARD**

Relative to the Inquiry Ordered
by the Minister of Finance
respecting

IRON OR STEEL PRODUCTS USED IN THE SHIPBUILDING INDUSTRY

•
Reference No. 139





Report by
THE TARIFF BOARD

Relative to the Inquiry Ordered
by the Minister of Finance
respecting

**IRON OR STEEL PRODUCTS
USED IN THE
SHIPBUILDING INDUSTRY**



Reference No. 139

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1967

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The Honourable Mitchell Sharp, P.C., M.P.
Minister of Finance
Ottawa

Dear Mr. Sharp:

I refer to your letter of July 14, 1966, in which you requested the Tariff Board to conduct an inquiry respecting certain iron or steel products used in the shipbuilding industry.

In conformity with Section 6 of the Tariff Board Act, I have the honour to transmit the Report of the Board relating to iron or steel products used in the shipbuilding industry, in English and in French. A copy of the transcript of the proceedings at the public hearings accompanies the Report.

Yours sincerely,

A handwritten signature in dark ink, appearing to read "J.C. Caudell". The signature is stylized with a large, sweeping initial "J" and a long, horizontal flourish extending to the right.

Chairman

Explanation of Symbols Used

- Denotes zero or none reported
- .. Indicates that figures are not available
- * In statistical tables, indicates a reported figure which disappears on rounding, or is negligible
- (a) A small letter in brackets denotes a footnote to a table
- (1) A number in brackets denotes a footnote to the text
- s.c. Denotes a Dominion Bureau of Statistics import or export statistical class

The sum of the figures in a table may differ from the total, owing to rounding

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Ottawa, July 14, 1966

Mr. L.C. Audette, Q.C.
Chairman
Tariff Board
Ottawa

Dear Mr. Audette:

The recent modifications in the programme for assisting the shipbuilding industry have occasioned representations from Canadian manufacturers of certain iron or steel products used in this industry to the effect that they will be adversely affected by imports of such products which enter free of duty under tariff item 44019-1. It has been suggested that this item be deleted from the Customs Tariff.

It appears desirable that all interested parties be given an opportunity to express their views on item 44019-1. I, therefore, direct the Tariff Board to make a study and report under section 4(2) of the Tariff Board Act on this item, taking into account all relevant factors.

If the Board's study should indicate that amendment to the Customs Tariff is desirable, I would request the Board to include recommendations regarding any such amendment in its report.

I would also ask the Board to submit its report as soon as possible.

Yours sincerely,

MITCHELL SHARP

Date of Public Hearing
and
List of Companies and Associations
Which Made Representations

A public hearing before the Board was held at Ottawa on November 21 and 22, 1966.

- The Algoma Steel Corporation, Limited, Sault Ste. Marie, Ontario
- * B.C. Towboat Owners' Association, Vancouver, B.C.
- British Iron & Steel Corporation, Limited, London, England
- Canadian Shipbuilding and Ship Repairing Association,
Ottawa, Ontario
- Dominion Foundries and Steel, Limited, Hamilton, Ontario
- Dosco Steel, Limited, Montreal, Quebec
- * Fisheries Council of Canada, Ottawa, Ontario
- Mitsui and Co. Ltd., Vancouver, B.C.
- Shipyards' Association of British Columbia, Vancouver, B.C.
- The Steel Company of Canada, Limited, Hamilton, Ontario

* Not represented at the hearing

Introduction

The item referred to the Board in this Reference, tariff item 44019-1, provides duty-free entry for iron or steel plates, sheets, angles, beams and knees, as well as iron or steel masts (and parts) and cable chain, all for ships and vessels. The duty-free provision of the item has been in the Customs Tariff, in essentially its present form, for sixty years. However, changing circumstances resulted in requests by the principal steel producers in Canada to have the item deleted. The shipbuilding industry, not unnaturally, requested that the duty-free provision be continued and it was supported by certain British and Japanese steel interests.

The iron or steel products covered by the tariff item, except for masts and cable chain, are the principal materials used in ship construction and by far the most important of these is steel plate.

In Section 2 of the Customs Tariff, plate is defined as a flat-rolled product of any shape (i) having a width of more than eight inches but not more than forty-eight inches, and a thickness of 0.23 inch or more, or (ii) having a width of more than forty-eight inches and a thickness of 0.18 inch or more.

The Customs Tariff defines sheet as a flat-rolled product of any shape (i) having a width of more than twelve inches but not more than forty-eight inches, and a thickness of 0.2299 inch or less, or (ii) having a width of more than forty-eight inches, and a thickness of 0.1799 inch or less.

At the hearing an angle was described as a steel shape, of any length, one section of which is at right angles to the other. (p. 23)

To a steel maker, a beam is a rolled shape; viewed in section, it may have the configuration of an "I", a "T", an "H" or a variety of other shapes. To a shipbuilder, a beam is a structural member running athwartships as support for a deck; in somewhat loose terminology it may run in the fore and aft line also.

Knees are simply pieces of steel plate, roughly triangular in shape. They are usually made from plate by the shipbuilder and are welded into a ship as corner braces.

The tariff item also provides for two finished products used in ships: masts and cable chain. The mast of a ship is a long slim cylinder projecting from the upper works. It usually supports communications equipment such as radio antennae, signal flags and lights. The mast can also support the derrick-booms, although usually a derrick post is now used for this purpose. The word "mast" in the tariff item, as administered by the Department of National Revenue, includes all the tubular work -- booms, posts, etc. -- associated with the mast itself. The parts of a mast include anything that is permanently attached to it, but do not include anything that is not so attached, for example, rigging.

In the language of the shipbuilder, cable chain is chain that is used only in connection with anchors. Very considerable strain is put on anchor chain and generally each link of the chain is fitted with a cross member known as a stud. As a consequence, this type of chain is known as stud-link chain; such chain is not made in Canada. Although the term is restricted, for a shipbuilder, to chain used for anchors, it is not so restricted by the Department of National Revenue, as the following quotation from a departmental memorandum indicates:

"Chain, stud link or otherwise, is only admitted under item 470 [now 44019-1] as being cable chain, when the iron or steel of which the links are made is $\frac{3}{4}$ " or over in diameter. Cable chain for vessels is not restricted as to use to anchoring or mooring."

Forms of Assistance to the Shipbuilding Industry in Canada

The three most important forms of assistance to the Canadian shipbuilding industry of interest within the frame-work of this Reference are tariffs, drawback of duties and subsidy. There are also special depreciation considerations for owners of ships built in Canada, as noted later.

The following is a brief description of each of these kinds of assistance. More detailed information may be found in Appendices III, IV, V and VI.

Customs Tariff

In addition to the products covered by tariff item 44019-1, duty-free entry is also provided for certain anchors (tariff item 44013-1), wire rope (44016-1), manufactures of iron, brass or other metal (44022-1), diesel and semi-diesel engines and parts thereof (44025-1), chronometers and compasses and parts thereof (44028-1); except for tariff items 44013-1 and 44016-1, the duty-free provision is restricted to goods of a class or kind not made in Canada. Engines and materials and articles for their manufacture and repair are permitted duty-free entry if for use in boats exclusively for commercial fishing operations (tariff items 44037-1 and 44040-1).

The shipbuilders also benefit from the tariff protection given to certain ships. However, some ships are duty-free under tariff item 43935-1 and certain others bear no British Preferential Tariff, under tariff item 44000-1.

Drawback of Duty

Since 1913 there have been regulations permitting the drawback of 99 per cent of the duty paid on goods used in the original construction of vessels built in Canada. In recent years, the regulations were amended so that the drawback applied also to goods used in the reconstruction of ships. However, on May 13, 1966, these provisions for the drawback of duties were discontinued.

Subsidy

Prior to May 1961, no subsidy was payable on the construction of ships in Canada. Between May 12, 1961 and March 31, 1963, a subsidy of 40 per cent of the approved cost of work performed was paid. Between March 31, 1963 and February 2, 1965, the subsidy was at a rate of 35 per cent. The subsidy was suspended between February 2, 1965 and January 1, 1966. On January 1, 1966 the subsidy was reinstated at a rate of 25 per cent which is to continue until May 31, 1969. Thereafter, the rate is to decline two percentage points per year until it becomes 17 per cent for ships completed after May 31, 1972.

The subsidy is payable only to a shipowner who is a citizen of Canada, a company incorporated in Canada, a Canadian municipal corporation or a provincial government. The ship must be kept on Canadian registry for at least five years following its completion.

Throughout the entire period, from 1961 to 1972, the regulations provide that the subsidy for fishing trawlers shall be an amount not exceeding 50 per cent of the approved cost.

Canadian Content

Under the subsidy regulations of 1961, the Minister of Transport was empowered to stipulate the amount of Canadian material that was to be incorporated in the ship in order to qualify for subsidy. The Canadian Maritime Commission was required to determine that the estimated cost of the proposed construction and the amount or proportion of Canadian materials and equipment met the conditions prescribed by the Minister.

Section 7(2) (b) of the Ship Construction Assistance Regulations 1962, stated:

"The Commission shall review each application and shall conduct such investigation as may be necessary to ...

"(b) establish that the estimated cost of the construction and the Canadian materials and equipment incorporated in the construction meet the conditions prescribed by the Minister."

And Section 8 of the same Regulations said:

"The shipowner and shipbuilder shall incorporate in the construction of a vessel in respect of which an application for a subsidy is made under these Regulations such Canadian materials and equipment as the Minister considers practicable upon considering the cost and availability of those materials and equipment." (See Appendix III).

This wording was not included in the Ship Construction Subsidy Regulations which, in 1966, succeeded the Ship Construction Assistance Regulations, and, hence, the Canadian content provision of the Regulations has been discontinued.

This change was of very considerable importance to both the steel makers and the shipbuilders; it really appears to be the *raison d'être* of this Reference. As a practical matter, when the regulations were in force, the shipbuilders, to get the full benefit of the subsidy, purchased as much of their steel domestically as possible. Now, however, they are free to buy competitively from foreign or domestic suppliers.

In the administration of this part of the Ship Construction Assistance Regulations, a shipbuilder had been required to list, for the Canadian Maritime Commission, every piece of material or equipment which he intended to import for use in the construction of the ship. The subsidy application form to be used for this listing is reproduced in Appendix VI. The actual incorporation of these materials and equipment was later confirmed by inspection of the finished ship and of the invoices for material. The Maritime Commission required the shipbuilder to obtain price quotations from Canadian suppliers for those materials and equipment which he proposed to import. If Canadian manufacturers were able to supply any of this material and equipment under conditions of cost and availability which the Minister of Transport considered practicable, the shipbuilder was given his choice of two options:

- 1) He could buy the Canadian product and subsequently receive the full subsidy allowed for the ship, or
- 2) He could buy the foreign product and lose the subsidy on the cost of the product.

Thus, the administration of the subsidy was designed to encourage the use of Canadian supplies and attempted to lead shipbuilders to achieve certain proportions of their requirements from Canadian production. As long as Canadian goods were used, the subsidy was payable on them regardless of price. However, if the Canadian price were judged to be unduly high, approval would be given to buy abroad without penalty under the subsidy. A price premium of 10 per cent was cited as being, at times, relevant to this approval, though this criterion was said to be applicable most particularly to the purchase of machinery and equipment. The spokesman for the Shipyards' Association of British Columbia commented:

"If the machinery was not made in Canada, then there was no argument, but if there was a choice between Canadian and foreign machinery, I think this is more the area where the 10 per cent was considered." (p. 180)

However, price was not the sole guide in deciding whether the subsidy should be paid; if the Minister decided that Canadian goods of adequate quality or quantity were not available at the correct time to fit into the shipbuilder's schedule, foreign materials and equipment could be used without a reduction of the subsidy.

Most of the steel plate and shapes needed by shipbuilders are made in Canada. Some sizes of bulb angles and bulb plate are not made in Canada and Canadian steel mills do not have heat treating, or "normalizing" facilities, though steel can be custom heat-treated in Canada by a company not affiliated with the steel mills.

The Canadian content provision was said to have been very effective in stimulating the use of Canadian material and equipment by the shipbuilders. A spokesman for the Canadian Shipbuilding and Ship Repairing Association observed that "we were always led to believe that where Canadian steel was available it had to be used, and it was generally available." (p. 182)

During the hearing spokesmen for the shipbuilding companies noted that their applications for subsidy were, at times, returned to them with the instruction that they must increase the Canadian content in their ships. Although they were not specifically advised what proportion they should achieve, they were of the opinion that about 80 per cent Canadian material and equipment was generally expected. To achieve such a proportion, they said, it was necessary to buy in Canada, regardless of price, practically everything that was available in Canada because those things which they were forced to buy abroad, through lack of domestic supply, easily constituted the remaining 20 per cent of the cost of the ship. In these circumstances, builders and ship repair companies would have no alternative but to buy whatever Canadian made steel could be used.

As noted above, the Ship Construction Subsidy Regulations, in effect since January 1966, do not give such direct encouragement to use Canadian materials; there is no Canadian content provision to encourage the shipbuilder to buy Canadian steel.

Depreciation Provisions

Under the provisions of the Canadian Vessel Construction Assistance Act, those provisions of the Income Tax Act which stipulate that recaptured depreciation should be added to income do not apply to shipowners to the extent that the proceeds of the sale of the ship are used for replacement of the ship under conditions satisfactory to the Canadian Maritime Commission or are guaranteed to be reserved for this purpose. The shipowner, therefore, is placed in a particularly favourable position under the Income Tax Act both with respect to determining the rate at which to charge depreciation and with respect to the proceeds from the sale of a vessel on which depreciation has been charged. The special depreciation provisions for tax purposes are now the subject of new proposed legislation laid before Parliament on December 21, 1966, in Bill C-259, an Act to Amend the Income Tax Act and to repeal the Canadian Vessel Construction Assistance Act; the Bill appears to add to the Income Tax Act, until 1974, somewhat analogous though modified special depreciation provisions and to provide for the repeal of the Canadian Vessel Construction Assistance Act.

The Shipbuilding Industry in Canada

Commencing in 1732, commercial shipbuilding, based on the abundant timber resources in Nova Scotia, New Brunswick and Quebec, flourished until by the middle of the nineteenth century it had become one of the country's major industries; it reached a peak in 1875 when nearly five hundred ships were built. Along with the building of ships there developed a Canadian ocean-going shipping industry.

Canada ranked fourth among the ship-owning nations of the world by 1878, with a merchant marine of 7,196 vessels and over 1.3 million tons.⁽¹⁾

A period of rapid decline for the Canadian industry followed the replacement of wood by steel. In Canada there were practically no ships built of steel until late in the first World War when the British Ministry of Shipping was instrumental in having a total of 41 ships built here. Following the war the Canadian government inaugurated a shipbuilding programme in an effort to perpetuate the industry and, by 1921, some 63 ships had been launched.

Little more building was done in Canadian yards until the Second World War. During the war there were 791 ships built here, almost equally divided between those for the navy and those for the merchant fleet. In 1945 there were 173 ocean-going ships on Canadian registry; in 1965 there were three. In addition, in 1965, there were 223 dry cargo and passenger ships and 48 tankers in service in the coasting trade and in the Great Lakes fleet. The composition of the Canadian merchant fleet is shown in the following table.

Table (1)

CANADIAN MERCHANT FLEET
(Ships of 1,000 Gross Tons and Over)

	<u>March 31, 1965</u>	
	<u>No.</u>	<u>Gross Tons</u>
Ocean-going Ships in Foreign Trade		
War-built dry-cargo ships.....	1	7,158
Other dry-cargo ships.....	1	21,372
Tankers.....	<u>1</u>	<u>15,185</u>
	3	43,715
Ships in Coasting Trade		
Dry-cargo and passenger ships.....	72	205,713
Tankers.....	<u>14</u>	<u>54,419</u>
	86	260,132
Lakes Fleet		
Dry-cargo and passenger ships.....	151	1,078,283
Tankers.....	<u>34</u>	<u>77,714</u>
	185	1,155,997

SUMMARY

Dry-cargo and passenger ships.....	225	1,312,526
Tankers.....	<u>49</u>	<u>147,318</u>
	<u>274</u>	<u>1,459,844</u>

Source: Based on report of the Canadian Maritime Commission, 1965,
p. 20

(1) Canadian Maritime Commission, Second Report, June 30, 1949

The low point in the value of new ship construction between 1947 and 1964 was reached in 1950 when just over \$26 million in new work was done. The same year saw the lowest point, in this period of time, in the value of ship repairs, about \$27 million. Since then the value of new construction and of ship repair has been higher; new construction reached a peak in 1963 of nearly \$130 million; repair, a peak in 1964 of nearly \$47 million. The increased level of new construction after 1961 is probably related to the introduction of the shipbuilding subsidy in May of that year. More detailed information is given in Appendix I.

Table (2)

Value of Shipbuilding and Repair,
Selected Years, 1947-1964

<u>Year</u>	<u>Value of New</u> <u>Construction(a)</u> (millions of dollars)	<u>Value of Ship</u> <u>Repair</u>	<u>Total</u>
1947	60.4	42.1	102.5
1950	26.2	27.0	53.2
1953	95.3	62.8	158.1
1955	68.0	42.1	110.0
1958	77.4	43.7	121.1
1959	71.6	45.1	116.7
1960	69.5	45.2	114.6
1961	62.7	44.7	107.4
1962	103.4	36.5	140.0
1963	129.6	43.7	173.3
1964	126.3	46.8	173.1

(a) Includes value of work done in reconditioning and conversion

Source: D.B.S., Shipbuilding and Repair; Cat. No. 42-206

Of the categories tabulated in Table 5 of Appendix I, cargo and cargo-passenger vessels comprised the largest value of ships delivered during any of these years, although ferries, fishing boats, scows, barges and tugs were built in large number. Ten cargo and cargo-passenger vessels were delivered in 1961 and in 1962, 13 in 1963 and 10 in 1964. On the average these vessels were worth \$3 million to \$4 million each. Their total value in 1963 was nearly \$54 million and in 1964, nearly \$31 million.

These sales of cargo and cargo-passenger vessels in the 1960's represent a significant increase from the immediately preceding years and contributed largely to the peak level of activity in 1963. Some of the differences in the construction of the various ships and the implication of these with respect to cost and consumption of steel are discussed below in the section on markets.

In 1964, the Dominion Bureau of Statistics listed, in the shipbuilding and repair industry, 65 establishments; these employed

nearly 14,000 production workers who received salaries and wages of nearly \$70 million. The total shipments of these establishments was \$234 million, of which, as noted in the preceding table, \$173 million was the value of new construction and repair.

Many of the establishments are relatively small in size; 40 of the 65 had shipments of less than one million dollars each; in total, they employed less than 1300 workers and had shipments of \$17 million, about 7 per cent of the industry total. The remaining 25 establishments accounted for over 90 per cent of the employment and the value of shipments for the industry as a whole.

Twenty-four of the 65 establishments were located in the Atlantic region; the value of their shipments was about \$45 million. Ten establishments were located in Quebec, with shipments valued at \$109 million; 12 were located in Ontario, with shipments of \$38 million; 19 were located in British Columbia, with shipments of \$43 million. Thus, nearly one-half of all the shipments originated in Quebec; the remainder were fairly evenly divided among the other three areas. The dominant position of the St. Lawrence river region in shipbuilding and repair has existed since 1947.

Problems of the Shipbuilding Industry

Canadian shipbuilders apparently are faced with higher construction costs than are builders in some other countries, notably Britain, Germany and Japan. In addition, they face duty-free competition on commercial fishing vessels and on ships built, owned and registered in the British Commonwealth for use in the Canadian coasting trade.

The Royal Commission on Coasting Trade estimated that, in 1957, the cost of building a ship was about 50 per cent higher in Canada than in Britain. The Commission compared Canadian cost with British because the British industry at that time was the largest in the world and was "the strongest competitor that Canadian shipyards have to meet." (1)

The Royal Commission attributed the higher costs in Canada principally to higher labour and material costs. The additional labour cost was not offset by greater productivity of Canadian workers; in this regard, the Commission noted that shipbuilding is not an industry amenable to mass production techniques.

A spokesman for the shipbuilding industry pointed out, in the course of the present study, that the assistance given to the industry had offset the higher costs of building a ship in Canada.

"I would say that during the 35 per cent and 40 per cent subsidy we were able to get business from the Canadian ship-owners; they didn't go to Britain, and now we are in a period, we don't know, since the subsidy has been reduced to 25 per cent, and then after 1969 down to 17 per cent." (p. 132)

The recent withdrawal of the drawback provision is a factor contributing to higher costs to the industry.

(1) The Report of the Royal Commission on Coasting Trade, p. 151

The shipbuilders noted:

"In the present situation it is clear that the Canadian shipbuilding industry cannot absorb further cost increases and remain competitive with off-shore builders. It is our conviction that the sharp reduction in subsidy, if supportable at all, will only be so if free access to steel is continued." (p. 124)

While there have been times when the importation of ships has been significant, in general foreign sources do not seem to have supplied a substantial part of the ship requirements of Canadian owners. However, some concern was expressed that the situation might change.

"We must tell the Board that this threatened loss of business is no theoretical or imaginary threat. Already Canadian shipowners have placed business abroad and even a Canadian province has recently called for world-wide tenders for a ship it proposed to have built." (p. 124)

The reference to tenders called by a provincial government was with respect to a ferry for the British Columbia government. The cost comparison, using the bids as published in The Financial Post (November 19, 1966), is as follows:

Lowest Canadian bid	\$8.8 million
Federal subsidy payable at 25 per cent	<u>2.2</u> million
Cost to B.C. Government	6.6 million
German bid	\$5.3 million
Customs duty payable at 25 per cent*	<u>1.325</u> million
Cost to B.C. Government	\$6.625 million

* Tariff item 44000-1

Thus, according to these bids, the combination of the 25 per cent subsidy applied to the Canadian bid and the 25 per cent duty applied to the German bid approximately equated the 66 per cent difference between the two bids.

Table (3)

Value of Ships Delivered and of Repairs and Conversions
Carried Out in Canadian Shipyards
Canada, by Region
Selected Years, 1947-1964

Year	Atlantic Region			St. Lawrence Region			Great Lakes Region			Pacific Region			Canada	
	Ship- Building	Repair & Conversion		Ship- Building	Repair & Conversion		Ship- Building	Repair & Conversion	Millions of Dollars	Ship- Building	Repair & Conversion		Ship- Building	Total Repair & Conversion
1947	5.4	9.5		35.0	5.5		0.1	2.7		4.0	9.9		44.5	27.7
1950	7.4	5.0		10.4	5.4		7.0	3.1		1.5	3.7		26.3	17.1
1955	0.4	8.1		37.8	7.9		6.6	2.9		2.5	8.1		47.3	27.0
1960	4.2	8.2		34.3	11.2		16.2	5.5		7.4	5.3		62.1	30.3
1961	2.6	7.9		25.2	12.8		11.0	4.3		5.2	5.6		44.0	30.5
1962	16.1	7.7		46.2	10.6		10.2	4.1		14.3	6.0		86.8	28.3
1963	21.5	7.5		79.7	10.7		19.9	5.2		62.6	12.2		183.8	35.6
1964	44.5	9.7		54.5	13.2		18.5	8.1		12.1	7.8		129.6	38.8

Note: These data are not entirely comparable with those of table (2) because of differences in coverage and because they record the value of deliveries rather than the value of work done

Source: Reports of The Canadian Maritime Commission

The Steel Industry in Canada

The Canadian steel industry, although very small at the turn of the century and subject to decline through the 1930's, has grown into one of Canada's leading industries. Its production has increased dramatically since World War II, increasing, with few exceptions, in each year.

Table (4)

Production of Steel Ingots and Steel Castings
Canada, Selected Years, 1900-1964

<u>Year</u>	<u>Production</u> <u>'000 tons</u>	<u>Year</u>	<u>Production</u> <u>'000 tons</u>
1900	26	1960	5809
1929	1543	1961	6488
1938	1294	1962	7173
1948	3201	1963	8190
1950	3384	1964	8968
1955	4529		

Source: D.B.S., Iron and Steel Mills, Cat. No. 41-203

In 1963, steel furnace capacity in Canada totalled 9.5 million net tons. It is located principally at Hamilton, Ontario, where Dominion Foundries and Steel, Limited (Dofasco) and The Steel Company of Canada, Limited, (Stelco) are located. Algoma Steel Corporation Limited at Sault Ste. Marie, Ontario, and the Dominion Steel and Coal Corporation, Limited (Dosco) at Sydney, Nova Scotia, account for most of the remaining capacity. These four companies were all represented at the public hearing. The products of the blast furnaces become the raw materials of the rolling mills which turn out the plate, sheet and structural shapes of significance to this Reference.

Rolling mill products are used in a wide variety of industries. The table following shows that in 1965 about 11 per cent of the plate, about 2.4 per cent of structural shapes and 0.4 per cent of hot rolled sheet shipped by the iron and steel industry went to the shipbuilding industry. Shipbuilding was one of three manufacturing industries taking over one hundred thousand tons of plate.

Table (5)

Partial Disposition of Net Shipments of Selected Rolled
Steel Products, by Industry, Canada, 1965

<u>Industry</u>	<u>Plate</u>	<u>Structural Shapes</u> - tons -	<u>Hot Rolled Sheet</u>
Shipbuilding	103,609	12,905	3,056
Automotive and aircraft industries	5,443	2,856	139,821
Agriculture	18,191	19,378	52,277
Contractors - Building	35,312	12,821	29,375
Structural steel fabricators	174,433	290,096	41,086
Containers	-	-	3,803
Machinery and tools	69,626	13,158	47,125
Natural resources and extractive industries	22,895	10,663	5,195
Appliances and utensils	17,081	626	42,401
Other metal stamping and pressing	12,509	9,601	63,571
Railroad cars and locomotives	53,935	17,247	18,614
Pipes and tubes	216,949	84	103,335
Total of above	729,983	389,435	549,659
Total of domestic disposition	<u>926,960</u>	<u>535,250</u>	<u>757,237</u>
Shipbuilding as percent of total disposition	11.2%	2.4%	0.4%

Source: D.B.S., Primary Iron and Steel, Cat. No. 41-001

Looking more particularly at shipments of plate and structural shapes over a longer period of time, it is evident from the following data that shipments of steel to shipyards increased significantly after 1960.

Table (6)

Shipments of Plate and Structural Shapes by Steel Mills
1958-1965

<u>Year</u>	<u>Steel Plate</u>			<u>Structural Shapes</u>		
	<u>Shipments</u>		<u>Per Cent</u>	<u>Shipments</u>		<u>Per Cent</u>
	<u>Total</u> '000 tons	<u>(a) Shipyards</u> to '000 tons	<u>Shipyards</u> to %	<u>Total</u> '000 tons	<u>(a) Shipyards</u> to '000 tons	<u>Shipyards</u> to %
1958	391	11	2.8	216	2	0.8
1959	531	21	4.0	257	4	1.4
1960	528	29	5.4	232	3	1.4
1961	661	58	8.8	312	5	1.5
1962	609	64	10.5	440	10	2.3
1963	731	79	10.9	469	10	2.1
1964	866	90	10.4	568	12	2.1
1965	951	104	10.9	542	13	2.4

(a) Includes exports

Source: D.B.S., Primary Iron and Steel, Cat. No. 41-001

The four basic steel producers are the only companies in Canada capable of making, in substantial quantities, the steel products used in shipbuilding. Algoma Steel Corporation, Limited, produces structural shapes, sheet and plate in its mill at Sault Ste. Marie. It is in a favoured position to supply the shipbuilding industry in the Upper Lakes Region and, in the navigation season, can readily ship its products by water to the shipbuilding market along the St. Lawrence.

Stelco and Dofasco at Hamilton, Ontario, are so located that most of the steel used in Canada is consumed within 150 miles of their mills. Like Algoma, they have rail and water transportation for the movement of their raw materials and products. Also like Algoma, Stelco makes the products of principal interest to the shipbuilders in this study. Dofasco makes sheet and plate but does not produce structural shapes.

Dosco, not a producer of plate or sheet, makes some of the structural shapes required by shipbuilders. Its mill at Sydney, Nova Scotia is close to raw materials and is in a favourable position to serve the shipbuilding industry in the Maritime provinces. However, it is at a disadvantage in serving shipbuilders in most of the St. Lawrence, the Great Lakes and the West Coast. Also, because of its limited product range, it can serve only a small part of the needs of the shipbuilders.

The Canadian steel industry did not supply large quantities of steel to the shipbuilding industry before 1960. Until 1939 "production of steel plates, beams, angles and sheets was on a very small scale indeed". (p. 15) During the war, production was greatly expanded and until about 1960 non-shipbuilding uses consumed all that the industry could supply. Since 1960 steel-making capacity has increased substantially in Canada and, as a result of the Canadian content provisions of the subsidy regulations, the steel producers were assured, until 1965, of the market for the shipbuilding industry.

The Canadian steel industry in recent years generally has been able to produce at a high level relative to its capacity. It had been producing at about 90 per cent of capacity until mid-1966 when more unused capacity began to appear. For steel plate, output in the latter part of 1966 was said to have been less than 75 per cent of capacity. (p. 85)

The Canadian steel industry is not alone in this state of idle capacity. In the countries of the European Coal and Steel Community:

"The steel industry, heading back into one of its cyclical declines, has seen its rate of growth fall well below that of the economy as a whole. This year output will be virtually static, while unused capacity is likely to rise above 20 per cent."(1)

In Japan, too, idle steel making capacity appears to have increased.(2)

(1) The Economist, London, October 1, 1966, p. 83

(2) United States Senate, Hearings before the Subcommittee on Merchant Marine and Fisheries of the Committee on Commerce, March 31, 1966

Unused capacity encourages steel companies more actively to seek foreign markets for their products. At such times, domestic steel industries feel the pressures of import competition particularly keenly. For Canadian mills, this increase in unused capacity, combined with the suspension, in 1965, of the Canadian content stipulation, exacerbated their exposure to foreign competition in the market for shipbuilding steel.

Underutilization of capacity abroad has forced foreign prices down and lower prices have encouraged imports of foreign steel to Canada. That higher prices are not the result of inefficiency was stated by the spokesman for the steel makers:

"... in steel publications generally the world lifts its hat to Canadian steel producers for their efficiency and the standard of quality of their products." (p. 81)

The Market for Steel in the Shipbuilding Industry

Consumption and Supply

In the years 1958 to 1965, when total shipments of rolled steel products from Canadian mills were averaging about 5 million tons, shipments of these products to the shipbuilding industry averaged well under 100,000 tons, consistently less than two per cent of the total. It is significant, however, that after the subsidy and Canadian content provisions were introduced in 1961, there was a noticeable increase in shipments of Canadian steel to shipbuilders and apparently a corresponding decline in imports of steel for this use.

Moreover, as Table (7) indicates, over the period 1958 to 1964 there was a steady increase in consumption of the relevant types of steel. The value of consumption of plate, sheet and structural shapes doubled from nearly \$9 million in 1958 to about \$18 million in 1964; only a small part of this increase reflected the higher average value per ton in the later year. In volume, the consumption of shipbuilding plate, sheet and structurals increased from 60,000 tons in 1958, to 116,000 tons in 1964, an expansion of 94 per cent. Within this total, the consumption of steel plate rose from 45,000 to 92,000 tons, an increase of 103 per cent. Thus, the consumption of plate, as a portion of the total of these materials, increased from 75 per cent to 80 per cent over the period. In recent years sales of plate to the shipbuilding industry have accounted for about 10 per cent of total shipments of plate by the steel companies.

Available information indicates that consumption of these products increased further in 1965, to about 135,000 tons valued at about \$20 million. In 1966, however, their consumption appears to have declined somewhat, though not back to the level of 1964.

A striking feature of the steel consumption in shipbuilding, in addition to the remarkable aggregate increase, has been the growth in Canadian factory shipments at the expense of imported products. The growth is particularly noticeable in plate; the Canadian mills were supplying about 25 per cent of the requirements in 1958 but about 98 per cent in 1964.

Table (7)

The Consumption of Plate, Structural Shapes and Sheet
by the Shipbuilding Industry,
Canada, 1958-1964

Product	Unit	1958	1959	1960	1961	1962	1963	1964
(1) Plate	(1000 tons) (\$1000) \$/ton	45 6,619 146	59 8,094 137	56 7,230 128	65 9,200 142	73 10,709 146	91 13,263 146	92 13,955 151
(2) Sheet	(1000 tons) (\$1000) \$/ton	3 439 162	3 474 153	3 495 166	3 514 161	3 469 174	3 463 175	3 568 164
(3) Structural shapes	(1000 tons) (\$1000) \$/ton	12 1,776 152	15 2,344 154	14 2,546 185	14 2,161 149	19 3,001 159	17 2,714 161	20 3,334 166
Total (1) + (2) + (3)	(1000 tons) (\$1000) \$/ton	60 8,833 148	77 10,912 141	73 10,272 141	82 11,874 144	95 14,179 149	111 16,440 149	116 17,857 154

Source: D.B.S., Shipbuilding and Repair, Cat. No. 42-206

Table (8)

Demand and Supply of Plate, Sheet and Structural Shapes for Shipbuilding
Canada, 1958-1966

	1958	1959	1960	1961	1962	1963	1964	1965(a)	1966(a)
						Thousands of Tons			
(1) <u>Plate</u>									
Consumption		59	56	65	73	91	92	113	102
Factory shipments	45	21	29	58	64	79	90	104	85
Apparent imports (consumption less shipments)	34	38	28	6	10	12	2	10	17
Apparent imports as percent of consumption (%)	76	64	49	10	13	13	2	9	16
(2) <u>Sheet</u> (b)									
Consumption	3	3	3	4	3	3	4	4	4
Factory shipments	*	1	2	2	2	3	3	4	4
Apparent imports (consumption less shipments)	3	2	1	2	1	*	2	-	*
Apparent imports as percent of consumption (%)	91	62	41	50	25	10	37	-	1
(3) <u>Structural shapes</u>									
Consumption	12	15	14	14	19	17	20	17	14
Factory shipments	2	4	3	5	10	10	12	13	12
Apparent imports (consumption less shipments)	10	12	11	10	9	7	8	4	3
Apparent imports as percent of consumption (%)	85	77	77	68	46	43	41	24	18
<u>Total (1) + (2) + (3)</u>									
Consumption	60	78	73	83	95	111	116	135	120
Factory shipments	13	26	34	65	76	92	105	121	101
Apparent imports (consumption less shipments)	47	52	40	18	19	19	12	14	19
Apparent imports as percent of consumption (%)	78	67	54	22	20	17	10	10	16

(a) Preliminary estimates

(b) Includes small quantities of strip

Source: Consumption: D.B.S., Shipbuilding and Repair, Cat. No. 42-206; Shipments: D.B.S., Primary Iron and Steel, Cat. No. 41-001

Although the subsidy and Canadian content provision were introduced in 1961, some shift from imported steel products to domestic sources of supply appears to have commenced prior to that date. This is especially true with regard to steel plate, imports of which had fallen from 76 per cent of requirements in 1958 to about 49 per cent in 1960.

The role of imports in filling demand for steel in Canadian shipyards is suggested in Table (8). There are no official statistics relating to imports of steel for shipbuilding prior to the last quarter of 1965; imports of plate, structural shapes and sheet are derived, in approximate terms, as the difference between consumption by the shipbuilding industry and shipments by the steel industry to shipbuilders.

This pattern of imports receives some confirmation from data supplied by the British Iron and Steel Corporation concerning exports from Britain. These data would include all exports to Canada by any of the 250 independent steel companies of the British Iron and Steel Federation. Nearly all of these exports were said to be confined to the Atlantic and St. Lawrence regions. In Tables (8) and (9) the effect of the elimination of the Canadian content provision appears evident even though the quantities of imports, particularly in Table (9) are relatively small and the construction schedules in the shipyards affect comparisons based on calendar years. Other information reported to the Board, for example, indicate somewhat smaller imports from Britain than do the data in Table (9).

Table (9)

Imports of British Shipbuilding Steel, 1959-66

<u>Year</u>	<u>(1)</u> <u>Plate</u>	<u>(2)</u> <u>Shapes</u> (thousand tons)	<u>(3)</u> <u>Total</u>
1959	8.4	4.0	12.4
1960	7.3	2.6	9.9
1961	7.2	3.1	10.3
1962	0.8	1.3	2.1
1963	1.9	0.6	2.5
1964	0.8	1.3	2.1
1965	6.4	2.5	8.9
1966(a)	6.6	2.7	9.3

(a) To be delivered in 1966

Source: Transcript, p. 282

The imports under tariff item 44019-1, in 1966, were valued at more than \$2.5 million, of which about one-third came from the U.S.A., about one-third from Continental Europe and the balance from Japan and Britain. These comparisons in value terms are not entirely representative of the tonnages shipped from the various countries principally because of the relatively high price per ton of U.S. steel and the relatively low price per ton of Japanese steel. Thus, in quantity terms, probably one-fifth to one-quarter of the imports in 1966 came from the U.S.A. The imports from the U.S.A., however, were not regarded by the steel companies as competitive to the same extent as those from overseas. Their high price indicates sizes and qualities not generally available in Canada.

Cable chain and masts, the other articles of interest in this study, are not made in Canada except to the extent that shipyards might construct their own masts. The requirements of cable chain, as shown in Table (10), have been relatively small and stable throughout the years.

Table (10)

Cable Chain Imports, 1958-65

<u>Year</u>	<u>Quantity</u> tons	<u>Value</u> \$'000	<u>Unit Value</u> \$/ton
1958	612	203	332
1959	561	187	333
1960	720	215	298
1961	937	223	238
1962	925	324	351
1963	705	268	380
1964	816	233	286
1965	785	238	303

Source: D.B.S., Trade of Canada

Regional Considerations

The shipbuilding industry in Canada is located in four distinct regions. One is on the Atlantic Coast where there are, relatively, a large number of shipbuilding establishments, the largest of these being at Halifax, N.S. and Saint John, N.B. Another region is along the St. Lawrence river where the industry is centred chiefly near Quebec City and Montreal. The third is the Great Lakes region, from Kingston, Ontario to the head of the Lakes; the fourth is on the

Pacific Coast, principally at Vancouver and Victoria, B.C. Since 1960 the value of shipbuilding and of ship repair and conversion has been highest in the St. Lawrence region, followed by the Atlantic, Great Lakes and Pacific regions, generally in that order. For the shipyards in the St. Lawrence and Great Lakes regions, the principal work has been in building ships for use on the St. Lawrence Seaway, particularly to take advantage of the larger size of vessel that can now make use of it. The Seaway is used by ships up to 730 feet in length, 75 feet in beam and 25.5 feet in draft; these can be built in Canadian yards.

In 1964, Canadian shipyards delivered the following ships of over 10,000 gross tons.

Table (11)

<u>Shipyard</u>	<u>Type of Ship</u>	<u>Gross Tons</u>
Port Arthur Shipbuilding Ltd.	Self-unloading bulk freighter	11,997
The Collingwood Shipyards Ltd.	Bulk freighter	10,239
Port Weller Dry Docks Ltd.	Self-unloading bulk freighter	18,809
Davie Shipbuilding Ltd., Lauzon, Que.	Bulk freighter	18,058
Saint John Shipbuilding and Dry Dock Co. Ltd.	Oil and Ore carrier	21,372

Saint John Shipbuilding and Dry Dock Company in 1966 delivered another oil and ore carrier of the same size as that listed. These carriers are 690 feet in length; they are of more than 30,000 dead weight tons.

The consumption of steel plate by the shipbuilding and ship repair industry has been higher in the St. Lawrence region than in any other region since 1957, although in 1963 and 1964 this region fell to about 35 per cent of the total compared with 57 per cent in 1957. The Great Lakes region has been consistently in second place except in 1962 when the Pacific region held second place instead of its customary third place.

The same pattern is evident in the tonnage of structural shapes except that in 1960 and in 1964 the Pacific region supplanted the Great Lakes region in second place. Table (12) illustrates the geographical distribution of the consumption of steel plate, sheet and structural shapes by the shipbuilding industry in 1963 and 1964. (See Appendix I for additional data).

Table (12)

Consumption of Steel Plate, Sheet and Structural Shapes
By Shipbuilders
Canada, By Region,
1963 and 1964

	<u>Plate</u> ^(a)	<u>Sheet</u> (thousand tons)	<u>Structural Shapes</u>	<u>Total</u>
<u>1963</u>				
Atlantic	16.9	0.5	2.2	19.6
St. Lawrence	32.0	1.2	6.9	40.1
Great Lakes	24.1	0.7	4.7	29.4
Pacific	<u>18.5</u>	<u>0.3</u>	<u>3.2</u>	<u>22.0</u>
Canada	91.5	2.7	16.9	111.1
<u>1964</u>				
Atlantic	15.6	0.5	3.2	19.3
St. Lawrence	32.7	1.6	7.8	42.1
Great Lakes	27.7	0.8	4.3	32.8
Pacific	<u>16.8</u>	<u>0.6</u>	<u>4.7</u>	<u>22.1</u>
Canada	92.8	3.5	20.0	116.4

(a) Includes small quantities of Strip

Source: Dominion Bureau of Statistics

As noted previously, the value of imports under tariff item 44019-1, in 1966, was about \$2.5 million. The Pacific and St. Lawrence regions each apparently accounted for approximately 40 per cent of the imports, in value terms, in that year.

The Pricing of Steel

The price of steel is a composite of many factors. Added to a base price are extra charges for quality, shape and size (thickness, width and length). The price finally quoted to a potential purchaser may contain some offsetting allowances for large quantity purchases, freight equalization or other considerations. Steel companies at the time of the hearing advised the Board that, at one time, they had given a special discount of \$5 per ton to shipbuilders, although this was withdrawn in 1964. (p. 86) Freight equalization is a device

whereby the purchaser pays a transportation cost equal to that from the most advantageously located mill.

Because of the complexities associated with pricing steel by a system of base prices plus extras, less allowances, price comparisons are difficult to make. The steel companies at the hearing maintained that it is not practical to refer to "a price" and they preferred to speak in terms of the differential between the laid-down cost of Canadian steel and of foreign steel.

Published or standard prices are not readily available, particularly in some European countries and Japan. Moreover, with reference to Japanese steel offered on the West Coast, the Board was informed that published prices often are not representative; each sale appears to be negotiated separately. However, the Board was told at the hearing that Japanese mild steel plate is priced at about \$U.S. 106 per metric ton - \$Cdn 104 per short ton - f.o.b. Japanese port. (p. 331) Mild steel plate for barge construction is the product generally exported from Japan to the Canadian West Coast; this steel plate is lower in both price and quality than the usual shipbuilding plate.

A spokesman for the Canadian steel industry noted a difference in pricing policy between European and North American producers. European producers were said to allow much greater price fluctuation as demand changes; Canadian producers endeavour to maintain some stability in prices. (p. 113) With the strong demand, to the middle of 1966, for the products of the steel mills, and the consequent high level of capacity utilization, Canadian steel prices remained relatively stable though with some fluctuations. For example, a typical type of plate used in shipbuilding was \$6.00 per hundred weight in the years 1958 through 1960, \$5.75 in the years 1961 through 1964 and \$6.00 in 1965 and 1966. A special allowance of 25 cents per hundred weight was introduced for shipbuilders in 1961 and withdrawn in 1964 or 1965. Toward the end of 1966 a reduction of 42 cents per hundred weight was announced for steel plate going to Quebec and the Atlantic provinces. This change occurred when some other steel prices were being increased and was attributed, at least in part, to offshore competition for plate in shipbuilding.

A feature of the pricing policy in Europe is the practice of "aligning" prices. Members of the European Coal and Steel Community are required to register their prices with the High Authority of the Community and to give advance notice of intent to change their prices. However, if a company can show that an offer to sell at a lower price has been made by another company, it is permitted to meet the lower price. This provision has been described as follows:

"... in accordance with the principle of non-discrimination, makers were bound to sell at their published prices to all comers. To this rule there were three important exceptions: a maker could lower his price to meet, but not undercut, the lower delivered price of another Community maker; or he could lower his price to meet, but not undercut, the lower delivered price within the common market of a non-Community maker -- provided he notified the High Authority and could substantiate the existence of a lower offer; or he could fix a special price for a 'non-comparable' transaction -- involving i.e. an exceptionally large quantity or an exceptional quality. In no circumstances was he permitted to sell at a price above his published prices." (1)

Table (13) shows the base price of steel plate, the added extras to bring it up to a specification for ship's plate, Lloyds 'A', and extras for a thickness of $\frac{1}{4}$ inch, a width of 60 inches and a length of 240 inches. An extra charge might be added for small quantities. Prices are given for Canada, Britain, the United States and West Germany. It might be noted that an average price of Canadian steel for ships was said at the hearing to be \$120 per ton, f.o.b. mill.

Table (13)

Development of Price for Ship's Plate
Equivalent to Lloyds 'A'; $\frac{1}{4}$ " x 60" x 240"

<u>Country</u>	<u>Base Price</u>	<u>Extra for Quality</u> Dollars per Short Ton	<u>Extra for Size</u>	<u>Total Price</u>
Canada	109.00	(b)	19.00	128.00
Britain(a)	118.92	none	6.07	124.99
United States	119.88	2.16	23.76	145.80
West Germany	99.92	(b)	(b)	99.92

(a) Converted at £ = \$3.00; \$U.S. = \$Cdn 1.08

(b) Extras included in base price

Source: Canada: The Steel Company of Canada, Limited, Classification of Extras, Jan. 17, 1966

Britain: Iron and Steel Board Price Determination 1966, No. 1 and Related Schedule No. 11

U.S.A.: Steel, The Metalworking Weekly, Nov. 7, 1966, p. 72

West Germany: British Iron and Steel Federation, Review of British and Foreign Press, No. 135; July 30, 1966

(1) PEP, Steel Pricing Policies, London, Eng.; December, 1964; p. 325

The above prices are examples of published prices for a particular kind of steel. As noted later in this section steel from Europe apparently is landed in Canada at costs that reflect lower prices. Prices at which actual transactions take place are negotiated on the basis of additional factors such as the chemical composition of the steel, quantities and competition from other suppliers. While a Lloyds'A' standard has been quoted because it is used internationally to specify steel plate for ships, it is not the only standard and, in fact, is not generally used in the United States.

Freight Cost

Because steel is heavy and relatively low-priced per ton, the cost of transportation is a significant factor in laid-down cost. Shipyards in the Pacific and Atlantic regions and the St. Lawrence are a considerable distance from the principal steel-making areas in Ontario. Yards in the Great Lakes region are more favourably situated; those in the Montreal area are probably in a fringe area with respect to competition from foreign mills.

Table (14) shows agreed rail freight charges.

Table (14)

Freight Rates from Steel Producing Areas to Shipbuilding and Ship Repairing Areas of Canada

<u>Destination</u>	<u>Plate</u>		<u>Other Products</u>	
	<u>Origin</u>		<u>Origin</u>	
	<u>Hamilton</u>	<u>Sault Ste. Marie</u>	<u>Hamilton</u> (b)	<u>Sault Ste. Marie</u> (b)
	- cents per hundred pounds -			
<u>Nova Scotia</u>				
Halifax	70(a)	85(a)	118 120 117	128 126 125 95
Pictou	70(a)	85(a)	121	150 129 150
<u>New Brunswick</u>				
Saint John	70(a)	85(a)	109	126 117
<u>British Columbia</u>				
Vancouver/Victoria	115	115	115	115

(a) Rates are 10 cents per hundred pounds higher from December 1 to April 14 each year

(b) Minimum weights generally 120,000 pounds; minimum weights for B.C., 140,000 pounds; minimum for plate is 150,000 pounds. Multiple rates are for different products; rates on the same horizontal line do not always apply to comparable products

Source: Canadian Freight Association, Agreed Charges

There is no agreed charge schedule for shipments of steel from Hamilton, Ontario to Montreal, Quebec; the open tariff rate is \$0.465 per hundred pounds for shipments of 50,000 pound minimum weight.

The freight rate per ton of steel in 70 ton lots is \$23 from Hamilton or Sault Ste. Marie to Vancouver or Victoria. The rate from Hamilton to Halifax or Saint John is \$19 per ton and from Sault Ste. Marie to Halifax or Saint John, \$21 per ton. However, Algoma Steel at Sault Ste. Marie equalizes its freight rate on Hamilton.

Thus, at a price for steel, f.o.b. mill, of \$120 per ton, the delivered cost on the West Coast would be \$143 per ton and on the East Coast, \$139 per ton.

In its Report on Reference 118 - Basic Iron and Steel Products - in 1957, the Board said: (p. 93)

"The public hearing by the Tariff Board has revealed that, more than tariff, freight charges upon imported steel have been a beneficent agent in capturing and retaining for the Canadian industry so great a portion of its own domestic market."

In Table (15) to the 1966 price as calculated earlier for Lloyds 'A' ship's plate, $\frac{1}{4}$ " x 60" x 240", is added the freight cost from the Canadian steel mill or overseas country to Montreal, Halifax and Vancouver, to obtain a delivered cost.

Table (15)

Comparison of Estimated Laid-Down Cost of Ship's Plate

<u>Destination</u>	<u>Country of Origin</u>	<u>Base Price Plus Extras</u>	<u>Freight Charge</u>	<u>Total Cost</u>
		- dollars per ton		-
Vancouver	Canada (Ontario)	128.00	23.00	151.00
	Britain	125.00	25.00 ^(a)	150.00
	West Germany ^(b)	99.92	25.00	124.92
	Japan	104.00	6.00 ^(c)	110.00
Montreal	Canada (Ontario)	128.00	9.30	137.30
	Britain	125.00	16.00	141.00
	West Germany ^(b)	99.92	16.00	115.92
	Japan	104.00	21.70	125.70
Halifax	Canada (Ontario)	128.00	14.00	142.00
	Britain	125.00	16.00	141.00
	West Germany ^(b)	99.92	16.00	115.92
	Japan	104.00	19.77	123.77

(a) Estimated

(b) Freight rates are those from Britain

(c) Residually based on quoted laid-down cost and published price in Japan

Table (15) suggests that no mill in Canada, Britain or Germany can compete on a cost basis against Japan at Vancouver. The British Iron and Steel Corporation representative said that British mills could sell on the West Coast only products not made by the Japanese.

Although the data in Table (15) indicate that Japanese steel might be competitive in eastern Canadian markets, there is no evidence that it is supplying shipyards in this area. The information provided to the Board was that steel from West Germany constituted the greatest competitive threat to Canadian steel mills. As the table shows, German steel can be laid down in Halifax and Montreal at a lower cost than either that from Britain or the mills in Canada. This would indicate that Canadian steel is competitive only at shipyards in the Great Lakes region, but even in that region German steel might make inroads. A spokesman for the steel companies expressed concern about this possibility.

"German prices, or continental prices seem to be lower than they were last year, or at least, the differential between Canadian and continental prices is widening.

"... so that we feel that there is a very great danger that we will lose what you call our Central Canadian market, which in turn I would say is perhaps only 30% or so of the total shipbuilding market." (p. 348)

During the hearing, comparisons less favourable to Canadian steel mills than those illustrated in Table (15) were discussed. It was pointed out that steel from Britain can be laid down in Halifax for about \$120 per ton after paying ocean freight of \$19 per ton, minimum 500-ton lots; the charter rate is \$16 per ton, minimum 2000 tons. This price compares with \$134 per ton for Canadian steel after paying freight of \$14 per ton (for plate) on a price of \$120 per ton which the steel companies said was their f.o.b. mill price.

During the hearing, the results of a contract actually negotiated in 1966 were placed before the Board. The spokesman for the Canadian Shipbuilding and Ship Repairing Association said:

"... we have had in Montreal a recent series of negotiations, and the actual spread in that particular case for ship's plates was \$21 a ton, and that was \$21 a ton whether it came from West Germany or from the United Kingdom." (p. 346)

The landed cost from Britain or from West Germany "happened to be \$21 a ton below the figure that we were quoted by Canadian mills. Now, that is a contract for 6600 tons, which has recently been placed." (p. 346) These figures indicate a saving of \$138,600 on plate for one ship.

The cost of Canadian steel shipped to Vancouver or Victoria was said to be \$143 per ton, after paying freight of \$23 per ton; this compares with a laid-down cost of \$110 per ton for Japanese steel. The factory price in Japan was quoted at the hearing at \$104 per ton. These calculations imply only \$6 per ton for transporting the steel from Japan to the Canadian west coast. While this is not

accurate, the evidence is that the laid-down cost in Vancouver, for the types of steel supplied from Japan, is well below that from Canadian steel mills. In recent years, Japan was said to have dominated the West Coast market for the mild steel plate which it supplies particularly for barge construction. The spokesman for the Shipyards' Association of British Columbia noted that imports of steel from Japan were a quite recent phenomenon. "When we project back into the 50's, we didn't get steel from Japan." (p. 353)

Britain provides only small quantities of specialized steel to the West Coast. (p. 298) The Canadian mills supply some of the higher quality plate and structural sections to that market, either directly to shipyards or through jobbers.

Steel makers and shipbuilders agreed that price is only one element in the decision whether to use Canadian steel or foreign steel. Factors such as availability, delivery schedules, steel quality and financing arrangements are all important. However, for much of their steel requirements, the shipbuilders generally appear to be able to rely on overseas suppliers to meet these other requirements and as long as this is so their concern then centers on price differentials. These can result in significant savings -- \$138,000 on one ship in the example cited above.

In 1963 cargo and cargo-passenger vessels accounted for over 46 per cent of the value of shipbuilding and ship repair work in the categories of shipbuilding tabulated in Table 5 of Appendix I. In a ship of this kind, the amount of steel used accounts for about 25 per cent of the material and equipment cost. (p. 121) Since material and equipment in total accounts for about half the total value of the ship, the cost of the steel is about 12 per cent of the value of the ship. In some types of ship, for example tugs, the value of machinery, such as engines and winches, runs to a much greater percentage of total value and the value of steel is correspondingly less. The Board was advised that a typical seaway-sized cargo vessel would contain about 6,600 tons of steel plate and approximately 1,500 tons of angles and other structural shapes. (p. 220) A sea-going tug as built on the Pacific coast would contain about 150 tons of steel. About 40 per cent of the cost of a 5,000-ton barge is steel.

Using the above figures, a cargo vessel selling for \$8 million would contain \$4 million worth of material and equipment, of which \$1 million would be accounted for by steel. The average value of the 8,000 tons of steel going into the ship would thus be about \$125 per ton.

Proposals and Representations

Tariff item 44019-1, formerly item 440f, is the only tariff item referred to the Board in this Reference. The item is as follows:

44019-1 Iron or steel masts, or parts thereof; iron or steel angles, beams, knees, plates and sheets; cable chain; all the foregoing for ships and vessels, under regulations prescribed by the Minister.

<u>British</u>	<u>Most-Favoured-</u>	<u>General</u>
<u>Preferential</u>	<u>Nation</u>	
Free	Free	Free

Seven expressions of interest were recorded with the Board. These were by: the group of four steel producers, the Canadian Shipbuilding and Ship Repairing Association, Shipyards' Association of British Columbia, the B.C. Towboat Owners' Association, the British Iron and Steel Corporation, Mitsui and Company and the Fisheries Council of Canada. Only the four steel companies proposed any change in the existing tariff item.

The four steel companies making the joint proposal were:

The Algoma Steel Corporation Limited,	Sault Ste. Marie, Ont.
Dominion Foundries and Steel Limited,	Hamilton, Ontario
Dosco Steel, Limited,	Montreal, Quebec
The Steel Company of Canada Limited,	Hamilton, Ontario

In their earlier, individual proposals, Algoma and The Steel Company of Canada (Stelco) recommended the deletion of item 44019-1; Dominion Foundries and Steel (Dofasco) proposed that "tariff item 44019-1 as it refers to iron and steel rolling mill products be deleted from the tariff." (p. 12) The four companies, during the hearing, proposed the retention of the duty-free provision only for masts and cable chain; these are not available from Canadian production.

The steel companies emphasized that the 1966 Ship Construction Subsidy Regulations affected them adversely because the deletion of the Canadian content provision removed the incentive for shipbuilders to purchase Canadian steel. The steel companies contended that, by cancellation of the duty drawback provision, the new regulations were designed to enable all products including steel used for shipbuilding to attract "the regular rates of the Canadian tariff." The rates on this steel would generally be 5 p.c., B.P., 10 p.c., M.F.N., as they are for certain other forms of steel. This intention is frustrated, the steel companies argued, by the existence of tariff item 44019-1; they urged that the item be deleted thereby making effective the regular rates of duty. This understanding of the intention is not borne out by a press release of January 17, 1966, by the Minister of Transport in which it is stated that:

"Coincident with the introduction of the new subsidy rate the Canadian content requirement in the administration of the subsidy is to be withdrawn to enable the industry to take full advantage of the free entry provided under the Canadian Tariff for various items used in ship construction." (p. 38)

When tariff item 44019-1 was first introduced, the production in Canada of the products named in the item was so small that the steel industry suffered no unfavourable consequences. In recent years, because Canadian rolling mill capacity has been greatly increased and products are in adequate supply, "the need for duty-free access to foreign steel has, for all practical purposes, disappeared." (p. 16) However, as production of steel plate increased, a combination of strong demand from other industries and the effect of the administration of the Canadian content provision for shipbuilding made unnecessary, until recently, much concern by the steel companies over the existence of the item.

The steel companies noted that special railway freight rates compensate partially for the handicap of distance from the steel mills to some of the shipbuilding areas. They pointed out, also, that the industry:

"is committed strongly in principle to f.o.b. pricing of steel rolling mill products the same for all markets, so as to be fair, for example, in the pricing of plate to structural fabrication to steel pipe companies, and to shipbuilding. This eliminates the favouring of one class of consumer against another." (p. 17)

The submission by the steel companies said further:

"... the wiping out of Canadian Content regulations as a pre-requisite for shipbuilding subsidy has discriminated against the Canadian steel industry because of the existence of Tariff Item 44019-1 ... The duty-free competition that prevails against steel for shipbuilding does not apply to competitive materials such as copper piping and aluminum superstructure as used in ships. Thus steel is placed at some disadvantage in the expansion of its domestic market against the other materials." (p. 20)

The steel producers summarized their position, in part, as follows:

"In summary, we would prefer the Canadian content provision or requirement, but failing this we request cancellation or elimination of Tariff Item 44019-1 with consequent reversion to Items 38001-1 and 38100-1 or other Items at prevailing rates of 5 - 10 - 10 ad valorem...

"With dutiable entry under 5% or 10% rates narrowing the price differential between Canadian and off-shore sources the Canadian mills would be in a position to seriously consider special allowances to Canadian shipbuilders in certain areas to further reduce the differentials, thus bringing Canadian prices for plate for shipbuilding to more attractive and competitive levels." (p. 342)

The steel producers' conclusions were expressed as follows:

"1. The primary steel industry of Canada supports the principle of subsidies to Canadian shipbuilding in today's competitive international markets, in which the United States, Great Britain, France and other countries find it necessary to subsidize their ship construction and/or shipping rates.

"2. The primary steel industry does object strenuously to being singled out to meet duty-free import competition in a very important market for steel rolling mill products when other materials and components were made dutiable under the new regulations by the cancellation of the duty drawback tariff item.

"3. Important tonnages of steel plate have been lost to foreign sources of steel this year to the detriment of Canada's Balance of Trade as well as to the Steel Industry, and it is the belief of the steel companies that elimination of steel plate, angles, beams, knees and sheets from Tariff Item 44019-1 will result in substantial increase in the use of Canadian steel products with resultant benefits to Canadian employment and to the Canadian economy.

"4. We request the Board to delete from Tariff Item 44019-1, plates, angles, beams, knees, and sheets, of iron and steel."
(p. 20)

The steel companies suggested that certain advantages are gained by the shipbuilders from a domestic supply of steel. These were said to include: easy availability of supplies, dependability, metallurgical services, new and improved grades of steel, and the convenience of carrying on transactions through Canadian financial institutions.

The Canadian Shipbuilding and Ship Repairing Association said that its membership includes every substantial shipbuilding and ship repairing concern in Canada. The sixteen member companies are:

Burrard Dry Dock Co. Ltd., North Vancouver, B.C.	Marine Industries Ltd., Sorel, Que.
Canadian Vickers Shipyards Ltd., Montreal, Que	Montreal Dry Docks Ltd., Montreal, Que.
Collingwood Shipyards, Collingwood, Ont.	Port Arthur Shipbuilding Co., Port Arthur, Ont.
Davie Shipbuilding Ltd., Lauzon, Que.	Port Weller Dry Docks Ltd., Port Weller, Ont.
Geo. T. Davie & Sons Ltd., Lauzon, Que.	Purdy Bros. Ltd., Halifax, N.S.
Ferguson Industries Ltd., Pictou, N.S.	Saint John Shipbuilding & Dry Dock Co. Ltd., Saint John, N.B.
Halifax Shipyards, Halifax, N.S.	Victoria Machinery Depot Co. Ltd., Victoria, B.C.
Kingston Shipyards, Kingston, Ont.	Yarrows Limited, Victoria, B.C.

The Association urged that there be no change in tariff item 44019-1. Its brief pointed to the reduction in subsidy that has taken place and said: "It is our conviction that the sharp reduction in subsidy, if supportable at all, will only be so if free access to steel is continued." (p. 124) It noted that steel represents in aggregate not less than 25 per cent of the cost of all materials and equipment of a conventional merchant ship and an even higher percentage of such relatively simple vessels as barges.

The Association said that its members have a difficult struggle to survive. There being no Canadian merchant marine, there is no opportunity to build ocean-going ships for such service, and the Canadian coastal shipping laws give no preference to Canadian built ships. Many other countries give a preference to ships built and registered in the country.

Canadian shipowners are under no compulsion to purchase ships in Canada and will do so only so long as it is to their economic advantage. The submission noted that, with the reduction in the subsidy and the increased costs that would surely flow from the imposition of a tariff against steel for shipbuilding, "it is far from certain that an important share of the business will not be lost to foreign yards." The Association claimed that the Canadian shipbuilding industry cannot absorb further cost increases and remain competitive with off-shore builders. The brief went on to say:

"The subsidy rate presently being applied was obviously determined against the total environment of shipbuilding in Canada and had, as one of the factors taken into account, the purchase of duty free foreign steel for shipbuilding. Any imposition of duty would upset the balance of the calculation and must in all equity justify readjustment of the subsidy rate." (p. 122)

The Association noted also that many structural shapes, although nominally made in Canada, are unavailable from Canadian mills and that shipyards, especially on the east and west coasts, would undoubtedly incur higher costs if the duty-free provision were deleted.

The Shipyards' Association of British Columbia is a trade association consisting of the fourteen members listed below. All members are located in the Greater Vancouver Area and all are engaged in the repair and building of barges, scows, derricks, tugs, fishing vessels, dredges and similar vessels. Managerial services are provided to the Association by the British Columbia Division of the Canadian Manufacturers' Association.

Members of the Shipyards' Association of British Columbia

Allied Shipbuilders Ltd.,
Vancouver, B.C.

B.C. Marine Shipbuilders Ltd.,
Vancouver, B.C.

Bel-Aire Shipyard Ltd.,
Vancouver, B.C.

Benson Bros. Shipbuilding Co. (1960) Ltd.,
Vancouver, B.C.

Burrard Shipyard & Marine Ways Ltd.,
Vancouver, B.C.

Celtic Shipyards Limited,
Vancouver, B.C.

Denman Shipyards, Division of
Gulf Tug & Barge Ltd.,
Vancouver, B.C.

McKenzie Barge & Derrick Co. Ltd.,
Vancouver, B.C.

John Manly Limited,
New Westminster, B.C.

W.R. Menchions & Co. Ltd.,
Vancouver, B.C.

Star Shipyard (Mercer's) Ltd.,
New Westminster, B.C.

Sterling Shipyards Ltd.,
Vancouver, B.C.

Vancouver Shipyards, Div. of
Vancouver Tug & Barge Co. Ltd.,
Vancouver, B.C.

West Coast Salvage & Contracting
Co. Limited,
Vancouver, B.C.

Of the fourteen members of the Association, five are engaged solely or largely in the building or repair of wooden ships and, hence, are not interested in the subject of the Reference. The remaining nine proposed that no change be made in the current provisions of tariff item 44019-1. This proposal was originally made on the letter-head of the Boat builders Section of the Canadian Manufacturers' Association, but later became the proposal of the Shipyards' Association. (p. 244A)

Companies in the Association, in 1965, employed 644 persons, with a payroll of over \$3 million; in that year they used 8,610 tons of iron and steel products in new construction and 354 tons in repair work. Members obtain their steel supplies from local steel warehouses and keep few records of the country in which the steel is made; such records as they do keep suggest that half the steel used is imported and half is of domestic manufacture.

The Association emphasized the higher cost of labour on the West Coast compared with that in yards elsewhere in Canada, and indicated that any further increase in costs due to tariffs on steel would render members unable to compete for business with yards in Eastern Canada.

Its members were said to purchase foreign steel at a price generally about \$20 per ton lower than the price of domestic steel and this results in savings of $4\frac{1}{2}$ to 5 per cent on the cost of a barge. The Association noted the inability, over the past two or three years, of Canadian steel mills to supply the needs of its members from warehouse stocks in Vancouver. The Association's brief concluded:

"... may we state our understanding that the present Federal Government subsidies for our industry were established on the premise that we would be able to take full advantage of the free entry provided in Tariff Item 44019-1 for iron and steel products covered therein and which are used in the construction of ships and vessels ...

"Our opposition to the deletion of Tariff Item 44019-1 may therefore be summarized as follows:

- "1. A tariff on imported steel will likely raise costs in the West Coast shipbuilding industry.
- "2. Higher steel costs will increase the competitive disadvantage of West Coast yards due to higher labour and freight costs in British Columbia. This situation will be aggravated further by recently projected increases.
- "3. Higher costs of marine transport on the British Columbia Coast would add to the cost of Canadian exports, thus making them less competitive on world markets." (p. 243)

The B.C. Towboat Owners' Association, representing 50 members engaged in Pacific coast and international towboat operations, opposed deletion of tariff item 44019-1. (p. 335) The membership was said to employ some 4,500 persons in the operation of more than 400 tugs and 500 barges. Investment was said to be in excess of \$60 million.

The Association maintained that the products covered by the tariff item were essential to the welfare of its industry, both in new construction and in the maintenance of existing fleets.

"We respectfully draw the Board's attention to a significant factor in that as an industry, we are for all practical purposes, captive customers of the British Columbia shipbuilders and ship repairers. Any artificial inflation of the costs of materials used by them must, we would think, be passed on." (p. 336)

The British Iron and Steel Corporation Limited is a trading company established by the British Iron and Steel Federation; the Federation is the central organization of the 250 independent steel companies of the British Steel Industry.

The Corporation proposed that "no change should be effected in the present Tariff Item 44019-1 and that it should therefore remain as it is at present ..." (p. 276) During the course of the hearing, the spokesman for the Corporation suggested that "consideration might be given to the addition after the word knees of the words channels, T-s, flats and other structural sections." (p. 302)

In support of its proposal, the Corporation questioned the ability of domestic mills to meet the steel needs of the Canadian economy. In this regard, it pointed to the large volume of steel imports relative to steel exports. It said that the imposition of import duties could lead to higher prices to Canadian consumers.

It was said that Canadian anti-dumping regulations favoured the non-British producer in that producers in the European Coal and Steel Community could align down to the lowest selling price of other producers, while the British producers could not. On the other hand, it was also realized that cancellation of tariff item 44019-1, by establishing some preferential margin, would improve the British competitive position in relation to M.F.N. countries; imports would become generally dutiable under tariff item 38100-1 at rates of 5 p.c., B.P. and 10 p.c., M.F.N.

The effect of the Canadian content provision of the subsidy regulations was stated as follows:

"The effect of the subsidy to the Canadian Shipbuilding Industry based on a 'Buy Canadian' stipulation was to limit severely the sale of British ship steel to Canadian yards. In the three full years in which the subsidy operated the average annual tonnage shipped by this Corporation fell to 20% of the presubsidy three year average. In 1965 when the subsidy was withdrawn the tonnage shipped approximated the pre-subsidy level and in the current year the upward trend continues ...

"The reason for the reintroduction on 1st January 1966 of the Shipbuilding subsidy providing as it does a subsidy to the Canadian shipowner, albeit at a lower rate than prior to 1965 but with the advantage of purchasing steel at world market prices, might be thought to suggest firstly that the shipowner is still in need of support but, secondly, that Canadian steelmakers are now capable of standing on their own feet in the world market. The imposition of a tariff on shipbuilding steel would diminish the object of the former and seem to question the second." (p. 279)

A brief on behalf of Mitsui and Co. Ltd., of Vancouver, was presented to the Board. Mitsui is a Japanese import-export house. The brief expressed the view that the best interests of both Japan and Canada lie in a high degree of unimpeded trade between the two countries. Mitsui proposed that tariff item 44019-1 be retained in the Customs Tariff, and said in support of this:

"It would seem that the continuing in force of this tariff item would simply maintain an existing situation and its removal would result in a definite worsening of the advantages of building ships in Canada, unless it were found that materials of Canadian origin were available to shipbuilding companies at prices similar to those which may frequently be available from abroad." (p. 315)

The Fisheries Council of Canada, in its proposal, noted that "we wish to register our objections, in principle, to the imposition of duties on iron and steel products used in the shipbuilding industry if, in fact, this will increase the cost of vessels built in Canada." (p. 338)

Analysis of Representations

The effect of certain recent changes in the subsidy, duty drawback and Canadian content provisions were largely responsible for the differences that arose between the steel producers and the shipbuilding companies and associations. In particular, the deletion from the Ship Construction Subsidy Regulations of the Canadian content requirements altered appreciably the incentive for shipbuilders to purchase Canadian steel. From mid-1961, when the content regulation came into effect, the purchase of plate, sheet and certain other basic forms of steel shifted very largely to Canadian steel mills. Prior to 1961, Canadian mills had supplied only a small part of the steel required for shipbuilding. The capacity of the steel mills to supply the shipbuilders has increased substantially in recent years and facilities have been established to roll wide plate. In the period from 1961 until 1965, when the Canadian content regulations were in effect, the shipbuilding market was virtually assured to the Canadian steel mills for whatever steel they could supply. Since then the proportion of imports of plate has increased from 2 per cent of requirements in 1964 to 16 per cent in 1966.

Several features of the commercial situation concerning the supply of steel and the building of ships in Canada have particular relevance to the positions taken by the steel companies and the shipbuilders.

There seemed to be general agreement that, for most of the rolling mill products listed in the tariff item, Canadian steel mills could supply the needs of the shipbuilders, though there may be periods of heavy demand when imported steel would be needed simply to supplement supplies from the Canadian mills. The quality of Canadian steel, delivery schedules and general customer servicing were, for the most part, regarded as satisfactory by the shipbuilding industry.

The principal issues, therefore, centred on the extent to which the Canadian steel companies could supply steel at prices competitive with imported steel, and further the extent to which, on the one hand, the steel companies would gain if rates of duty were imposed and, on the other, the extent to which the shipbuilding industry would be placed under a disadvantage by a tariff on these types of steel.

Canadian steel makers face competition on the Atlantic Coast and in the St. Lawrence River area from steel producers in Britain and Continental Europe. The information presented earlier indicated a landed price of British or German shipbuilding plate at Halifax or Montreal of about \$120 per ton compared with a landed cost of plate from Canadian mills of \$135 to \$140 per ton. Moreover, European steel prices were said to be much more flexible than Canadian and ocean freight rates lower than the quoted \$16 per ton appear to be available at times.

On a price of steel of about \$100 per ton in West Germany, a 10 per cent M.F.N. duty would increase the landed cost of German steel at Halifax or Montreal to about \$126 which would still leave Canadian steel mills at a significant disadvantage against steel from Germany. Similarly, a 5 per cent rate of duty on steel from Britain apparently would not always place Canadian steel mills in a favourable competitive position at Halifax or Montreal.

In the Great Lakes area the competitive position of the Canadian steel companies would improve with the imposition of the duty; the steel companies were concerned that, with duty-free entry, they could lose even a large part of their central Canadian market.

Some Japanese steel plate was said to be priced at \$110 per ton at Vancouver; the landed-cost of Canadian plate is about \$142 per ton. If Japanese steel became dutiable at 10 per cent M.F.N., the laid-down cost of the type of plate typically coming from Japan would be still well below the landed cost of the plate from Canadian steel mills.

International prices of steel apparently have fallen recently because of the under utilization of steel making capacity, particularly in Europe. Mills have a powerful incentive to keep utilization at a high level because:

"fixed costs in the industry are a sufficiently large item in total costs to affect significantly the rate of return if capacity utilization falls. Thus, when steel demand falls individual makers have strong motives for reducing prices in order to maintain if possible their utilization rate." (1)

The prices offered in 1966 by foreign producers are evidently the result of this policy. If a duty were imposed on steel imported into Canada, foreign prices, in present circumstances, might be lowered to retain a competitive position in the Canadian market. The Canadian steel companies noted that in North America prices are not so volatile in the face of changing conditions, though they also suggested that the imposition of a duty might induce them to quote prices that would then be more competitive with the landed duty-paid cost of imported steel.

"With dutiable entry under 5 per cent or 10 per cent rates narrowing the price differential between Canadian and off-shore sources, the Canadian mills would be in a position to seriously consider special allowances to Canadian ship-builders in certain areas to further reduce the differentials, thus bringing Canadian prices for plate for ship-building to more attractive and competitive levels." (p. 342)

(1) PEP, Steel Pricing Policies, London, Eng., 1964, p. 322

SUMMARY AND CONCLUSIONS

This Reference deals with tariff item 44019-1 which provides duty-free entry for a number of products of the steel industry when they are used for ships or vessels. Although the item was introduced in its present form into the Customs Tariff in 1930 the provisions of the item were of no real concern to the steel industry until the subsidy scheme was suspended in early 1965. The effect of several changes arising out of the new ship construction subsidy plan introduced in 1966 was that, for the first time, the provisions of the item became significant -- and not only for the steel producers but for the shipbuilders as well.

The most significant change from the standpoint of the steel producers was that relating to Canadian content. Prior to 1966, in order to qualify for the shipbuilding subsidy, "such Canadian materials and equipment as the Minister considers practicable" were required to be incorporated in a ship. The new regulations, effective January 1, 1966, do not contain any reference to Canadian content. Consequently, since that date, shipbuilders have been free to use any foreign material, in any quantity, without affecting their eligibility for subsidy.

Another change related to the Customs duty drawback provision. Since 1913, shipbuilders had been able to obtain a drawback of 99 p.c. of the Customs duty paid on imported goods used in ship construction. On January 1, 1966, this drawback provision was withdrawn. The result was to make effective, once again, on all goods used in shipbuilding, those rates of duties set out in Schedule "A" of the Customs Tariff. However, from the steel producers' point of view, cancellation of the duty drawback provision was of little benefit because, under tariff item 44019-1, the principal steel rolling mill products used in ship construction may enter free of duty.

In these circumstances, the steel industry sought the deletion from tariff item 44019-1 of "iron or steel angles, beams, knees, plates and sheets". These steel products of interest to the industry would then become dutiable under tariff item 38001-1, 38100-1 or 38201-1, all of which carry rates of 5 p.c. under the British Preferential Tariff and 10 p.c. under the Most-Favoured-Nation Tariff.

On the other hand, the shipbuilders, faced with considerable reduction in the subsidy rate in 1966 and with the loss of the benefit of the drawback provision in the same year, contended they were in no position to stand any increases in steel costs, which represent about one quarter of their total material costs; consequently they urged that tariff item 44019-1 remain in effect.

The Canadian shipbuilding industry operated with great difficulty before the subsidy was introduced in 1961, even though it enjoyed virtually duty free entry of all materials and component parts. The Royal Commission on Coasting Trade, 1957, reported that costs of shipbuilding in Canada were about 50 per cent above those in Britain, principally because of higher labour and material costs; a current comparison, brought to the Board's attention, indicated a domestic bid more than 60 per cent above a German bid.

Between May 12, 1961 and March 31, 1963, shipbuilders received a subsidy of 40 per cent of the approved cost of a ship; from April 1, 1963 to February 2, 1965, the rate was 35 per cent. During these years, the Canadian content provision generally restricted the shipbuilders' usage of virtually duty-free materials to about 20 per cent of the total.

Under the new subsidy arrangement, effective January 1, 1966, the rate of subsidy is reduced to 25 per cent until May 31, 1969 and declines thereafter by 2 percentage points each year until it becomes 17 per cent in 1972. There is no Canadian content provision but, on May 13, 1966, the drawback provision of 99 per cent was discontinued thus increasing the cost of many imported items. This increase will tend to increase further the difference between Canadian and off-shore costs of shipbuilding, particularly for those shipbuilders remote from the industrial center of Canada. An increase in duties on primary steel products, brought about by the deletion of tariff item 44019-1, would cause a still further increase in costs, at least for this same group of shipbuilders.

In recent years, plate has accounted for about 80 per cent of the total tonnage of primary steel products used by the shipbuilding industry. Prior to 1961, the domestic producers of steel plate supplied somewhat less than half the steel plate used by the shipbuilding industry. However, by 1964, Canadian steel mills were supplying virtually all the steel plate used by shipbuilders -- something over 90,000 tons or about 11 per cent of total Canadian plate output.

Unquestionably the Canadian content provision of the shipbuilding subsidy introduced in 1961 accounted for this great increase in the use of Canadian plate.

On the basis of statements made at the public hearing, it would seem that the tonnage used by the Great Lakes shipyards would continue to be supplied by Canadian steel mills even if tariff item 44019-1 remains in effect. On the other hand, the tonnage used by yards located in the Atlantic provinces and in British Columbia would probably be largely lost to the Canadian mills; even if tariff item 44019-1 were deleted, this tonnage would likely be supplied by European or British steel mills and by Japanese steel mills. At the time of the hearing, the differentials between the laid-down cost of foreign plate and Canadian plate were such that even the imposition of a 5 p.c. duty on plate from Britain and a 10 p.c. duty on European and Japanese plate would not make Canadian plate prices competitive.

With respect to the tonnage used by those yards located on the St. Lawrence, as things stood at the time of the hearing, it seems unlikely that the Canadian steel mills would retain much of this business -- and it is by no means certain that the deletion of tariff item 44019-1 would improve the competitive position of the Canadian mills sufficiently to secure this business for them.

In summary, under present conditions of world supply and price, it would seem that the Canadian plate mills would retain somewhat less than one-third of their plate business with the shipbuilding industry whether tariff item 44019-1 were deleted or not -- that used by Great Lakes shipyards. With respect to somewhat more than a third, that used by the Atlantic and British Columbia yards, most of this is probably lost to them even if tariff item 44019-1 were deleted. With

respect to the balance, again somewhat more than one-third, that used by shipyards in the St. Lawrence, this also may be largely lost to them, but the deletion of tariff item 44019-1 might serve to retain a portion of this business for Canadian mills.

Thus it would seem that, with small and doubtful benefit to Canadian steel mills, the deletion of tariff item 44019-1 would impose on shipyards the burden of a five or ten per cent duty on their imports of steel.

The Board, consequently, in the present circumstances, recommends that tariff item 44019-1 remain unchanged.

The elimination of the Canadian content provision means that Canadian steel mills will lose much of the tonnage shipped by them to the shipbuilding industry in recent years; at the hearing there was evidence that orders for important tonnages had already been placed with overseas suppliers. The withdrawal of the drawback provision has generally restored to domestic producers the benefit of the normal protective rates of duties applying to their products; however this restoration will not benefit the producers of those steel products enumerated in tariff item 44019-1.

The steel industry stated that, if the price differential were narrowed by the protective duties of five per cent and ten per cent -- the rates which would apply if tariff item 44019-1 were eliminated -- the Canadian steel mills would be able seriously to consider making special allowances in order to retain more of the business.

In these circumstances the steel industry feels that it is the subject of some discrimination because it alone is required to forego, for the benefit of the shipbuilders, the protective rates otherwise applicable to its products.

In many countries, as well as Canada, the shipbuilding industry is assisted in a number of ways and the particular problem of the steel producers might be re-examined to determine if some measure beyond the scope of this inquiry could be adopted to encourage the use of Canadian steel by shipyards located on the St. Lawrence, in British Columbia and in the Maritime Provinces without, at the same time, increasing costs to the shipbuilders.

However, as stated previously, in present circumstances, the Board is recommending that tariff item 44019-1 be left unchanged.

J. C. Audette

Chairman

Robert H. ...
First Vice-Chairman

B. J. ...
Member

Ottawa, February 8, 1967

APPENDIX ISTATISTICSTable

- 1 Indexes of Industrial Production, 1958-65
- 2 Selected Shipbuilding and Repair Statistics, 1962-64
- 3 Selected Regional Shipbuilding and Repair Statistics, 1962-64
- 4 Value of Shipbuilding and Repair, 1958-64
- 5 Shipments of Vessels by the Shipbuilding and Repair Industry, 1958-64
- 6 Iron and Steel Used in New Ship Construction and Repair, 1958-64
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- 8 Consumption of Iron and Steel by the Shipbuilding & Repair Industry, 1958-64
- 9 Regional Consumption of Selected Iron and Steel Products by the Shipbuilding and Repair Industry, 1958-64
- 10 Apparent Consumption of Steel Plate in Canada, 1958-65
- 11 Average Value of Steel Plate, 1958-65
- 12 Imports: Ships and other vessels built in any foreign country, if British registered since September 1, 1902, on application for licence to engage in the Canadian coasting trade, s.c. 9156
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- 14 Imports: Ships and boats n.e.s., s.c. 591-99
- 15 Imports: Cable chain for ships and vessels, s.c. 466-20

Indexes of Industrial Production, 1958-65
(1958 = 100)

<u>Year</u>	<u>Durable Manufacturing</u>	<u>Shipbuilding and Repair</u>
1958	100	100
1959	108	98
1960	108	98
1961	110	96
1962	124	118
1963	134	122
1964	148	117
1965	164	127

Source: Based on D.B.S., Cat. No. 61-005 (Supplement)

Table 2

Selected Shipbuilding and Repair Statistics, 1962-64

Size of Establishments by Value of Shipments	Establishments No.	Production Workers No.	Wages	Cost of Fuel and Electricity	Cost of		Value Added	Value of Shipments
					Materials Used	- Thousand dollars -		
<u>1962</u>								
Under \$500,000	30	676	2,525	135	2,534	4,344	7,016	
\$500,000 to \$999,999	13	778	3,433	121	3,443	5,978	9,550	
\$1,000,000 to \$4,999,999	9	1,363	5,735	243	6,619	9,671	16,473	
\$5,000,000 and over	<u>10</u>	<u>11,715</u>	<u>55,714</u>	<u>1,867</u>	<u>52,230</u>	<u>85,340</u>	<u>139,457</u>	
Canada	62	14,532	67,407	2,366	64,827	105,332	172,496	
<u>1963</u>								
Under \$500,000	29	599	2,352	124	2,735	3,988	6,843	
\$500,000 to \$999,999	12	770	3,516	124	3,133	5,489	8,759	
\$1,000,000 to \$4,999,999	12	1,625	6,794	262	10,868	12,845	23,953	
\$5,000,000 and over	<u>11</u>	<u>11,841</u>	<u>58,710</u>	<u>1,841</u>	<u>68,026</u>	<u>99,134</u>	<u>169,034</u>	
Canada	64	14,835	71,372	2,351	84,763	121,455	208,590	
<u>1964</u>								
Under \$500,000	23	463	1,801	81	1,798	3,035	4,913	
\$500,000 to \$999,999	17	791	3,842	168	4,042	7,770	11,980	
\$1,000,000 to \$4,999,999	14	1,734	7,600	246	11,901	12,837	24,978	
\$5,000,000 and over	<u>11</u>	<u>10,982</u>	<u>56,663</u>	<u>1,572</u>	<u>78,269</u>	<u>112,680</u>	<u>192,521</u>	
Canada	65	13,970	69,907	2,067	96,011	136,322	234,393	

Source: D.B.S., Cat. No. 42-206

Table 3
Selected Regional Shipbuilding and Repair Statistics, 1962-4

	<u>Establishments</u> No.	<u>Production</u> Workers No.	<u>Wages</u> - Thousand dollars -	<u>Fuel and</u> <u>Electricity</u> - Thousand dollars -	<u>Cost of</u> <u>Materials</u> <u>Used</u>	<u>Value</u> <u>Added</u>	<u>Value of</u> <u>Shipments</u>
<u>1962</u>							
Nfld., P.E.I. & N.B.	6	1,597	6,307	208	3,386	10,649	14,245
Nova Scotia	17	2,029	8,183	386	5,315	10,607	16,309
Quebec	9	5,817	27,678	1,109	30,022	44,736	75,887
Ontario	12	1,664	7,053	260	10,213	10,020	20,436
British Columbia	18	3,425	18,186	403	15,891	29,320	45,619
Canada	62	14,532	67,407	2,366	64,827	105,332	172,496
<u>1963</u>							
Nfld., P.E.I. & N.B.	6	1,934	8,023	379	6,873	9,698	16,949
Nova Scotia	18	2,080	8,280	382	7,172	11,411	18,965
Quebec	9	5,669	28,309	899	36,861	51,033	88,826
Ontario	11	1,934	8,774	302	15,220	17,727	33,229
British Columbia	20	3,218	17,986	389	18,637	31,586	50,621
Canada	64	14,835	71,372	2,351	84,763	121,455	208,590
<u>1964</u>							
Nfld., P.E.I. & N.B.	7	1,377	6,339	255	8,321	12,593	21,169
Nova Scotia	17	2,139	9,190	399	8,087	15,426	23,912
Quebec	10	5,767	29,838	805	43,550	64,447	108,802
Ontario	12	2,205	10,167	283	18,103	19,401	37,781
British Columbia	19	2,482	14,372	325	17,950	24,452	42,729
Canada	65	13,970	69,907	2,067	96,011	136,322	234,393

Source: D.B.S., Cat. No. 42-206

Table 5

Shipments of Vessels by the Shipbuilding and Repair Industry
1958-64

<u>Year</u>	<u>Cargo and Cargo- passenger</u>	<u>Ferries</u>	<u>Fishing Boats</u>	<u>Scows and Barges</u>	<u>Tugs</u>	<u>Other (a) Vessels</u>	<u>Small Craft</u>	<u>Total</u>
				- Number -				
1958	7	2	31	57	8	24	60	189
1959	3	-	41	36	10	44	29	163
1960(b)	4	4	15	31	19	14	27	114
1961	10	..	19	21	9	18	22	99
1962	10	5	45	47	12	18	9	146
1963	13	4	67	33	25	17	13	172
1964	10	5	73	50	11	16	21	186
				- Thousand Dollars -				
1958	27,677	3,691	1,021	3,147	1,242	43,441	1,280	81,498
1959	15,991	-	1,236	2,119	1,400	123,793	383	144,923
1960(b)	20,167	6,755	2,618	2,880	1,710	41,785	161	76,075
1961	32,347	(c)	1,391	3,049	1,437	5,710	298	44,221
1962	26,288	11,335	4,333	6,472	1,926	22,861	151	73,366
1963	53,621	12,211	10,895	5,363	6,244	27,327	179	115,840
1964	30,819	10,523	15,000	9,112	1,806	37,734	184	105,178

(a) Includes dredges, passenger ships, tankers and naval vessels
 (b) After 1959, based on revised Standard Industrial Classification
 (c) Included in Other Vessels

Source: D.B.S., Cat. No. 42-206

Table 6

Iron and Steel Used in New Ship Construction and Repair,
1958-64

Year	(1) Value of New Ship Construction and Repair	(2) Total Iron and Steel Used	(3) Products of Item 44019-1(a)	(4) Total Iron and Steel as % of (1)	(5) Products of Item 44019-1 as % of (1)
				%	%
			- Thousand dollars -		
1958	121,109	14,097	9,037	11.6	7.5
1959	116,695	15,686	11,099	13.4	9.5
1960 (b)	114,599	15,679	10,487	13.7	9.2
1961	107,419	16,709	12,098	15.6	11.3
1962	139,956	20,629	14,503	14.7	10.4
1963	173,334	25,287	16,708	14.6	9.6
1964	173,059	27,402	18,090	15.8	10.5

(a) Includes steel plate, sheet, structural shapes and cable chain

(b) After 1959, based on revised Standard Industrial Classification

Source: D.B.S., Trade of Canada and D.B.S., Cat. No. 42-206

Shipments of Rolled Steel Products, 1958-65

Table 7

(A) To All Industries

Year	Plate	Structural Shapes	Sheet and Strip	- tons -	Other(a)	Total
1958	390,950	215,828	1,236,074		1,517,737	3,360,589
1959	530,708	257,236	1,834,346		1,835,166	4,457,456
1960	528,222	231,524	1,744,217		1,833,881	4,337,844
1961	660,954	311,759	1,882,171		1,749,081	4,603,965
1962	608,505	440,326	2,194,776		1,878,734	5,122,341
1963	730,757	468,565	2,572,674		2,144,910	5,916,906
1964	865,975	567,874	2,869,284		2,407,116	6,710,249
1965	951,463	542,157	3,113,701		2,494,329	7,101,650

(B) To The Shipbuilding Industry

Year	Plate	Structural Shapes	Sheet and Strip	- tons -	Other(a)	Total
1958	11,064	1,758	280		2,225	15,327
1959	21,128	3,580	1,282		1,588	27,578
1960	28,596	3,150	1,996		1,875	35,617
1961	58,331	4,619	1,934		3,730	68,614
1962	63,743	10,232	2,328		2,872	79,175
1963	79,316	9,606	2,805		2,952	94,679
1964	90,273	11,730	2,629		3,941	108,573
1965	103,609	12,905	4,167		4,455	125,136

(a) Includes semi-finished shapes, bars, wire rod, rails, tie plates and track material

Source: D.B.S., Cat. No. 41-001

Consumption of Iron and Steel
by the Shipbuilding & Repair Industry
1958 - 64

<u>Year</u>	<u>Plate</u>	<u>Structural Shapes</u>	<u>Sheet</u>	<u>Other (a)</u>	<u>Total</u>
		- Thousands of Dollars -			
1958	6,619	1,776	439	5,263	14,097
1959	8,094	2,344	474	4,774	15,686
1960(b)	7,230	2,546	495	5,408	15,679
1961	9,200	2,161	514	4,834	16,709
1962	10,709	3,001	469	6,450	20,629
1963	13,263	2,714	463	8,847	25,287
1964	13,955	3,334	568	9,545	27,402

(a) Includes wire, pig iron, alloy steel, pipe and fittings, bars, castings and strip

(b) After 1959, based on revised Standard Industrial Classification

Source: Based on D.B.S., Cat. No. 42-206

Table 9

Regional Consumption of Selected Iron and Steel Products
by the Shipbuilding and Repair Industry, 1958-64

	Plate (a)	Structural Shapes	Sheet	Other (b)
	- tons -			
<u>1958</u>				
Atlantic	1,648	598	236	839
Quebec	20,781	5,602	918	3,700
Ontario	13,999	3,242	315	1,352
British Columbia	<u>9,305</u>	<u>2,208</u>	<u>1,242</u>	<u>1,164</u>
Canada	45,733	11,650	2,711	7,055
<u>1959</u>				
Atlantic	4,094	567	247	965
Quebec	28,213	8,023	1,106	3,217
Ontario	15,302	3,922	197	1,257
British Columbia	<u>11,667</u>	<u>2,745</u>	<u>1,538</u>	<u>2,262</u>
Canada	59,276	15,257	3,088	7,701
<u>1960(c)</u>				
Atlantic	4,275	2,249	345	1,253
Quebec	27,080	6,609	973	3,577
Ontario	15,548	2,017	317	1,063
British Columbia	<u>9,819</u>	<u>2,853</u>	<u>1,342</u>	<u>2,345</u>
Canada	56,722	13,728	2,984	8,238

Table 9
(Cont'd)
Other (b)

Plate (a)	Structural Shapes	- tons -	Sheet	Other (b)
<u>1961</u>				
Atlantic	1,627		369	848
Quebec	5,373		799	4,432
Ontario	4,156		757	1,476
British Columbia	<u>3,297</u>		<u>1,267</u>	<u>3,296</u>
Canada	14,453		3,192	10,052
<u>1962</u>				
Atlantic	726		339	1,052
Quebec	9,733		824	5,997
Ontario	4,084		732	1,452
British Columbia	<u>4,290</u>		<u>800</u>	<u>1,974</u>
Canada	18,833		2,695	10,475
<u>1963</u>				
Atlantic	2,194		498	1,423
Quebec	6,865		1,203	9,420
Ontario	4,688		709	1,382
British Columbia	<u>3,162</u>		<u>299</u>	<u>1,428</u>
Canada	16,909		2,709	13,653
<u>1964</u>				
Atlantic	3,206		500	1,025
Quebec	7,811		1,620	12,673
Ontario	4,290		793	1,501
British Columbia	<u>4,734</u>		<u>597</u>	<u>938</u>
Canada	20,041		3,510	16,137

(a) Includes some strip

(b) Includes bars, castings, wire and pig iron

(c) After 1959, based on revised Standard Industrial Classification

Source: The Dominion Bureau of Statistics

Table 10

Year	Canadian Factory Shipments	Apparent Consumption of Steel Plate in Canada, 1958-65			Consumption by Shipyards	Shipyard Consumption as p.c. of Total
		Imports	Exports	Apparent Consumption		
		- Tons -				%
1958	390,950	..	..	..	45,339	..
1959	530,708	85,322	..	..	58,965	..
1960	528,222	79,874	37,076	571,020	56,319	9.9
1961	660,954	70,579	12,540	718,993	64,658	9.0
1962	608,505	59,151	26,246	641,410	73,432	11.4
1963	730,757	101,997	23,470	809,284	91,034	11.2
1964	865,975	102,771	25,718	943,028	92,126	9.8
1965	951,463	264,572	25,669	1,190,366	..	..

Source: D.B.S., Cat. Nos. 41-001, 42-206 and Trade of Canada

Table 11

Average Value of Steel Plate, 1958-65

	Imported Plate (60" to 100")				Canadian Factory Shipments	Used by Shipbuilders
	<u>U.K.</u>	<u>EEC</u>	<u>Japan</u>	<u>U.S.A.</u> - \$/ton -	<u>Total</u>	
1958(a)	141	101	93	-	127	146
1959	130	100	92	112	118	137
1960	135	110	104	107	139	128
1961	111	122	103	106	125	142
1962	143	104	109	106	141	146
1963	145	96	102	97	122	146
1964	129	106	102	104	130	151
1965	127	108	107	96	118	..

(a) Imports are based on July to December data

Source: Based on D.B.S., Trade of Canada and Cat. Nos. 41-203 and 42-206

Table 12

Imports: Ships and other vessels built in any foreign country, if British registered since September 1, 1902, on application for licence to engage in the Canadian coasting trade, s.c. 9156(a)

Tariff Item: 440 (44000-1)

Year	Total Imports		Average Value	Dutiable Imports		Duty Collected
	No.	\$	\$/Vessel	No.	\$	\$
<u>1. Total</u>						
1958	1	700,000	700,000	1	700,000	175,000
1959	1	618,311	618,311	1	618,311	154,578
1960	4	2,552,273	638,068	4	2,552,273	638,069
1961	2	225,968	112,984	..	..	..
1962	1	420,000	420,000	..	..	..
1963	3	1,323,778	441,259	..	..	..
<u>2. United States</u>						
1958-59	-	-	-	-	-	-
1960	2	194,748	97,374	2	194,748	48,687
1961	2	225,968	112,984	..	..	..
1962	1	420,000	420,000	..	..	..
1963	3	1,323,778	441,259	..	..	..
<u>3. Bahamas</u>						
1958-59	-	-	-	-	-	-
1960	2	2,357,525	1,178,763	2	2,357,525	589,382
1961-63	-	-	-	-	-	-
<u>4. France</u>						
1958	1	700,000	700,000	1	700,000	175,000
1959-63	-	-	-	-	-	-
<u>5. Netherlands</u>						
1958	-	-	-	-	-	-
1959	1	618,311	618,311	1	618,311	154,578
1960-63	-	-	-	-	-	-

(a) Beginning in 1964, included in s.c. 591-99

Table 13

Imports: Vessels and other water-borne craft, built outside of
Canada, n.o.p., s.c. 9157^(a)

Tariff Items: 439g (43935-1) and 440a (44003-1)

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Value</u> \$	<u>Duty Collected</u> \$
<u>1. Total</u>			
1958	1,903,025	636,826	132,718
1959	1,163,826	813,269	175,830
1960	3,244,723	2,655,609	650,071
1961	5,299,313	..	..
1962	3,365,753	..	..
1963	2,637,159	..	..
<u>2. United Kingdom</u>			
1958	1,400,438	271,739	41,649
1959	259,165	246,656	36,998
1960	327,051	314,481	47,174
1961	385,273	..	..
1962	454,862	..	..
1963	630,695	..	..
<u>3. United States</u>			
1958	393,847	256,347	64,084
1959	633,606	353,606	85,973
1960	949,437	946,740	254,664
1961	1,101,626	..	..
1962	1,870,179	..	..
1963	602,909	..	..
<u>4. Denmark</u>			
1958	11,539	11,539	2,885
1959	12,520	12,520	3,130
1960	2,200	2,200	550
1961	178,003	..	..
1962-63	-	-	-

Table 13
(Cont'd)

<u>Year</u>	<u>Total Imports</u> \$	<u>Dutiable Value</u> \$	<u>Duty Collected</u> \$
<u>5. Germany, Fed. Rep. of</u>			
1958	4,449	4,449	1,112
1959	12,058	12,058	3,015
1960	4,433	4,433	1,109
1961	2,512,661	..	..
1962-63	-	-	-
<u>6. Japan</u>			
1958	1,740	1,740	435
1959	4,546	4,546	975
1960	7,612	7,612	1,561
1961	5,390	..	..
1962	1,803	..	..
1963	252,646	..	..
<u>7. Netherlands</u>			
1958	79,337	79,337	19,834
1959	14,176	14,176	3,426
1960	1,589,429	1,015,582	253,897
1961	1,046,473	..	..
1962	981,812	..	..
1963	1,115,209	..	..
<u>8. Norway</u>			
1958	-	-	-
1959	2,276	2,276	455
1960	4,500	4,500	1,125
1961	67,388	..	..
1962	56,430	..	..
1963	4,070	..	..
<u>9. Other</u>			
1958	11,675	11,675	2,719
1959	225,479	167,431	41,858
1960	360,061	360,061	89,991
1961	2,499	..	..
1962	667	..	..
1963	31,630	..	..

(a) Beginning in 1964, included in s.c. 591-58 and 591-99

Table 14

Imports: Ships and boats n.e.s., s.c. 591-99(a)

Tariff Items: 439g, 440 and 440a (43935-1, 44000-1 and 44003-1
(respectively))

<u>Year</u>	<u>Total Imports</u>		<u>Average</u> <u>Value</u> <u>\$/ship</u>
	<u>No.</u>	<u>\$</u>	
<u>1. Total</u>			
1964	100	1,767,194	17,672
1965	195	5,752,527	29,500
<u>2. United Kingdom</u>			
1964	40	100,010	25,003
1965	34	81,739	2,404
<u>3. United States</u>			
1964	52	416,441	8,008
1965	148	2,100,602	14,193
<u>4. France</u>			
1964	-	-	-
1965	1	610,000	610,000
<u>5. Netherlands</u>			
1964	1	650,000	650,000
1965	6	2,756,818	459,470
<u>6. Norway</u>			
1964	4	462,430	115,608
1965	5	11,255	2,251
<u>7. Other</u>			
1964	3	138,313	46,104
1965	1	192,113	192,113

(a) Prior to 1964, classified under s.c. 9156 and 9157

Table 15

Imports: Cable chain for ships and vessels, s.c. 466-20^(a)

Tariff Item: 44019-1 (440f)

<u>Year</u>	<u>Total Imports</u>		<u>Average Value</u>
	tons	\$	\$/ton
<u>1. Total</u>			
1958	612	203,470	332
1959	561	186,802	333
1960	720	214,869	298
1961	937	223,361	238
1962	925	324,300	351
1963	705	267,637	380
1964	816	233,291	286
1965	785	237,791	303
<u>2. United Kingdom</u>			
1958	512	156,284	305
1959	422	140,344	333
1960	398	113,284	285
1961	325	96,777	298
1962	414	140,227	339
1963	308	121,702	395
1964	272	63,579	234
1965	193	64,983	337
<u>3. United States</u>			
1958	99	46,793	473
1959	139	46,458	334
1960	285	91,610	321
1961	491	105,633	215
1962	338	126,425	374
1963	216	85,310	395
1964	221	61,019	276
1965	213	55,099	259

Table 15
(Cont'd)

<u>Year</u>	<u>Total Imports</u>		<u>Average Value</u>
	tons	\$	\$/ton
<u>4. Sweden</u>			
1958-60	-	-	-
1961	72	19,645	273
1962	123	43,914	357
1963	144	42,286	294
1964	198	52,002	263
1965	350	96,568	276
<u>5. Other</u>			
1958	2	393	197
1959	-	-	-
1960	38	9,975	263
1961	48	1,306	27
1962	50	13,734	275
1963	37	18,339	496
1964	124	56,691	457
1965	29	21,141	721

(a) Prior to 1964, s.c. 5231

Source: Based on D.B.S., Trade of Canada

APPENDIX II

TARIFF HISTORY

Tariff HistoryTariff Item 44019-1 - Previously 440f

Iron or steel masts, or parts thereof; iron or steel angles, beams, knees, plates and sheets; cable chain; all the foregoing for ships and vessels, under regulations prescribed by the Minister

	<u>B.P.</u>	<u>M.F.N.</u>	<u>General</u>
1930, May 2	Free	Free	Free

Prior to May 2, 1930, the goods were provided for in tariff item 470, viz:- Iron or steel masts, or parts thereof, and iron or steel beams, angles, sheets, plates, knees and cable chain, for wooden, iron, steel or composite ships and vessels; and iron, steel or brass manufactures which at the time of their importation are of a class or kind not manufactured in Canada, when imported for use in the construction or equipment of ships or vessels, under regulations prescribed by the Minister of Customs.

1906, November 30	Free	Free	Free
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APPENDIX III

SHIP CONSTRUCTION ASSISTANCE REGULATIONS, 1962

APPROPRIATION ACTS**Ship Construction Assistance Regulations**

P.C. 1962-1122

AT THE GOVERNMENT HOUSE AT OTTAWA

WEDNESDAY, the 8th day of AUGUST, 1962.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, is pleased hereby to make the annexed Regulations respecting Capital Subsidies for the construction of commercial and fishing vessels applicable in respect of payments in connection with the construction of commercial and fishing vessels for which payments provision is made in any enactment of the Parliament of Canada for defraying the several charges and expenses of the public service from and after April 1, 1962.

REGULATIONS RESPECTING CAPITAL SUBSIDIES FOR THE
CONSTRUCTION OF COMMERCIAL AND FISHING VESSELS

Short Title

1. These Regulations may be cited as the *Ship Construction Assistance Regulations*.

Interpretation

2. In these Regulations,

- (a) "agreement" means an agreement between Her Majesty, represented by the Commission, and a shipowner and a shipbuilder, entered into pursuant to these Regulations;
- (b) "approved cost" means
 - (i) such amount of the purchase price of an eligible ship or fishing trawler as is approved by the Minister, or
 - (ii) in the case of an eligible ship or fishing trawler built by the owner of that vessel, such amount of the value of the vessel as is approved by the Minister;
- (c) "Commission" means the Canadian Maritime Commission;
- (d) "Committee" means an Interdepartmental Committee composed of duly appointed representatives of the Commission, the Departments of Transport, Finance and Defence Production and, when matters relating to assistance for the construction of fishing vessels are under consideration, the Department of Fisheries;
- (e) "contract" means
 - (i) a contract between a shipowner and a shipbuilder for the construction of a commercial ship or fishing trawler, or
 - (ii) in the case of a commercial ship or fishing trawler built by the owner thereof, the plans and specifications indicating the estimated cost of that vessel;
- (f) "eligible ship" means a vessel that is intended for use in commercial enterprise and that is
 - (i) a self-propelled vessel of one hundred tons gross tonnage or over,
 - (ii) a vessel that is not self-propelled, of two hundred tons gross tonnage or over, or
 - (iii) a tug of fifty tons gross tonnage or over;
- (g) "fishing trawler" means a fishing vessel that has a steel hull of not less than seventy-five feet in length and that uses an otter trawl or a similar device;
- (h) "Minister" means the Minister of Transport;
- (i) "shipbuilder" means a Canadian citizen or a corporation incorporated under the laws of Canada, or any province of Canada that is engaged within Canada in the business of shipbuilding;
- (j) "shipowner" means a Canadian citizen, a corporation incorporated under the laws of Canada or of any Province, or Her Majesty in Right of any Province; and
- (k) "subsidy" means a capital subsidy payable under these Regulations.

Application

3. These Regulations apply in respect of subsidies, for the construction of commercial and fishing vessels, paid out of moneys from time to time voted by Parliament for this purpose.

Administration

4. The Commission shall administer the scheme of subsidies in accordance with these Regulations and such additional directions as may be given by the Minister.

Subsidy

5. (1) A subsidy, in respect of the construction in Canada of any eligible ship, may be paid in an amount not exceeding

- (a) forty per cent of the approved cost incurred for work performed under a contract between May 12, 1961 and March 31, 1963; and
- (b) thirty-five per cent of the approved cost incurred for work performed under a contract after March 31, 1963.

(2) A subsidy in respect of the construction in Canada of a fishing trawler to be operated out of a port in any of the Provinces of New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island or Quebec may be paid in an amount not exceeding fifty per cent of the approved cost incurred for work performed under a contract after May 12, 1961.

Application for Subsidy

6. (1) A shipowner and shipbuilder may make a joint application to the Commission for a subsidy in respect of the construction, sale and delivery of a commercial vessel or fishing trawler.

(2) A person who is or proposes to be the owner and the builder of a commercial vessel or fishing trawler may make application to the Commission for a subsidy in respect of the construction of that vessel.

(3) No application for a subsidy shall be made in respect of a vessel that was under construction on May 12, 1961.

7. (1) The Minister may prescribe the form and manner in which applications for subsidies under these Regulations are to be made and the documentary information that is to accompany such applications.

(2) The Commission shall review each application and shall conduct such investigation as may be necessary to

- (a) determine the financial responsibility of the shipowner and shipbuilder and the eligibility of the project; and
- (b) establish that the estimated cost of the construction and the Canadian materials and equipment incorporated in the construction meet the conditions prescribed by the Minister.

(3) The Committee shall review each application considered by the Commission and make such recommendation to the Minister through the Commission as the Committee considers appropriate.

Canadian Content

8. The shipowner and shipbuilder shall incorporate in the construction of a vessel in respect of which an application for a subsidy is made under these Regulations such Canadian materials and equipment as the Minister considers practicable upon considering the cost and availability of those materials and equipment.

Agreement

9. (1) With the approval of Treasury Board, the Commission shall enter into an agreement with the shipowner and the shipbuilder, or, where the shipowner and shipbuilder is the same person, with that person setting out the terms and conditions under which the subsidy will be paid.

(2) Every agreement made under subsection (1) shall specify the Canadian materials and equipment to be included in the vessel.

(3) Every agreement made under subsection (1) shall provide, *inter alia*,

- (a) for appropriate protection of the interests of Her Majesty in Right of Canada in respect of the moneys paid by way of subsidy;
- (b) for payment of the capital financial assistance by way of a lump sum on registration of the vessel or by progress payments up to eighty per cent of such assistance during construction of the vessel and the balance on completion of the vessel or otherwise at the discretion of the Commission;
- (c) that the shipowner undertakes
 - (i) to retain the vessel on Canadian registry for a period of five years, and
 - (ii) not to sell or transfer the vessel during that period without the consent of the Commission and the approval of the Treasury Board;
- (d) that the Commission may refuse to consent to a transfer described in paragraph (c) unless the shipowner refunds to Her Majesty in Right of Canada an amount equal to the product obtained by multiplying the amount of the subsidy paid in respect of the vessel by the fraction of the five year period that the vessel will not be retained on Canadian registry;
- (e) that where
 - (i) a vessel is disposed of after May 12, 1961,
 - (ii) section 4 of the *Canadian Vessel Construction Assistance Act* applies to the proceeds of that disposition, and
 - (iii) the proceeds of that disposition are used to purchase a vessel in respect of which a subsidy is to be paid under these Regulations,
 the subsidy shall be reduced by the amount of income tax that would have been payable on those proceeds if section 4 of the *Canadian Vessel Construction Assistance Act* had not applied to those proceeds;
- (f) that the shipowner and shipbuilder will each keep accurate and detailed records of his costs in respect of the vessel;

(g) that all accounts and records described in paragraph (f) will be available to the Commission for audit and inspection by any agent of Her Majesty in Right of Canada at any time during the construction of the vessel and during a period of two years after payment of the subsidy; and

(h) for such other matters as may be considered appropriate by the Commission.

(4) Paragraph (e) of subsection (3) does not apply in respect of the proceeds obtained from a hire-purchaser under a hire-purchase agreement, for the construction of a vessel, entered into prior to May 12, 1961.

Payments

10. The payments under any agreement shall be made by the Commission to the shipbuilder in accordance with the agreement.

11. Payment of a subsidy by the Commission to a shipbuilder pursuant to these Regulations in respect of the cost of construction by the shipbuilder of a vessel for a shipowner shall, for all purposes relevant to the business carried on by the shipbuilder, be deemed to be a payment made to the shipbuilder by the shipowner on account of the cost of the construction of that vessel.

12. The Commission, when determining the capital cost of a vessel under the *Canadian Vessel Construction Assistance Act* shall base such capital cost on the actual amount contributed by the shipowner towards the cost of construction of that vessel.

APPROPRIATION ACTS

Ship Construction Assistance Regulations, amended

P.C. 1963-215

AT THE GOVERNMENT HOUSE AT OTTAWA

FRIDAY, the 8th day of FEBRUARY, 1963.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, is pleased hereby to amend the Ship Construction Assistance Regulations made by Order in Council P.C. 1962-1122 of 8th August, 1962⁽¹⁾, in accordance with the schedule hereto.

SCHEDULE

1. Subsection (1) of section 5 of the *Ship Construction Assistance Regulations* is revoked and the following substituted therefor:

- "5. (1) A subsidy in respect of the construction in Canada of any eligible ship may be paid in an amount not exceeding
- (a) forty per cent of the approved cost incurred for work performed after May 12, 1961, under a contract entered into and filed with the Commission on or before March 31, 1963; and
 - (b) thirty-five per cent of the approved cost incurred for work performed after March 31, 1963, under any contract other than a contract described in paragraph (a)."

APPROPRIATION ACTS.

Ship Construction Assistance Regulations, amended.

P.C. 1965-1386

AT THE GOVERNMENT HOUSE AT OTTAWA.

WEDNESDAY, the 28th day of JULY, 1965.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency the Governor General in Council, on the recommendation of the Minister of Transport, is pleased hereby to amend the Ship Construction Assistance Regulations made by Order in Council P.C. 1962-1122 of 8th August, 1962⁽¹⁾, as amended⁽²⁾, in accordance with the Schedule hereto.

SCHEDULE.

1. (1) Subparagraph (i) of paragraph (f) of section 2 of the *Ship Construction Assistance Regulations* is revoked and the following substituted therefor:

“(i) a self-propelled vessel of one hundred tons gross tonnage or over, other than a wooden fishing vessel that is to be operated out of a port in any of the Provinces of New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island or Quebec,”

(2) Section 2 of the said Regulations is further amended by deleting the word “and” after paragraph (j) thereof, by adding the word “and” after paragraph (k) thereof and by adding thereto the following paragraph:

“(l) “wooden fishing vessel” means a fishing vessel that has a wooden hull and that is designed to be used in commercial fishing.”

2. Section 5 of the said Regulations is amended by adding thereto the following subsection:

“(3) A subsidy in respect of the construction in Canada of a fishing trawler to be operated out of any port in Canada may be paid in an amount not exceeding fifty per cent of the approved cost for work performed under a contract that was made after April 1, 1965.”

APPENDIX IV

SHIP CONSTRUCTION SUBSIDY REGULATIONS, 1966

APPROPRIATION ACTS.**Ship Construction Subsidy Regulations.**

P.C. 1966-1252

AT THE GOVERNMENT HOUSE AT OTTAWA.

THURSDAY, the 30th day of JUNE, 1966.

PRESENT:

HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL.

His Excellency the Governor General in Council, on the recommendation of the Minister of Industry, is pleased hereby to revoke the Ship Construction Assistance Regulations made by Order in Council P.C. 1962-1122 of 8th August, 1962,⁽¹⁾ as amended,⁽²⁾ and to make the annexed Regulations respecting Capital Subsidies for the construction of commercial and fishing vessels, in substitution therefor, applicable in respect of payments in connection with the construction of commercial and fishing vessels for which payments provision is made in any enactment of the Parliament of Canada for defraying the several charges and expenses of the Public Service.

REGULATIONS RESPECTING CAPITAL SUBSIDIES FOR THE
CONSTRUCTION OF COMMERCIAL AND FISHING VESSELS.

Short Title.

1. These Regulations may be cited as the *Ship Construction Subsidy Regulations*.

Interpretation.

2. In these Regulations,

- (a) "approved cost" means that portion of the cost or value of an eligible ship determined by the Minister as the cost of the eligible ship for the purposes of a subsidy;
- (b) "completed", in relation to an eligible ship, means that a Certificate of Registry has been issued for the ship pursuant to the *Canada Shipping Act* and, where that Act requires it, that a Steamship Inspection Certificate has been issued for the ship pursuant to that Act;
- (c) "eligible ship" means a new
 - (i) vessel, or
 - (ii) fishing trawler,
 intended for use in a commercial enterprise, that is constructed in Canada by
 - (iii) a shipbuilder for a shipowner, or
 - (iv) a shipowner for his own use,
 and that is declared by the Minister, in his discretion, to be an eligible ship for the purpose of these Regulations, but does not include a fishing vessel with a wooden hull to be used in commercial fishing;
- (d) "fishing trawler" means a fishing trawler of not less than 75 feet in overall length that uses an otter trawl or similar device;
- (e) "vessel" means a vessel that is of at least
 - (i) 100 tons gross tonnage if self-propelled,
 - (ii) 200 tons gross tonnage if not self-propelled, or
 - (iii) 50 tons gross tonnage if a tug,
 and that is
 - (iv) a fishing vessel,
 - (v) a merchant ship customarily engaged in the transportation of goods or passengers,
 - (vi) a vessel used in the construction, servicing or maintenance of other vessels or marine works, or
 - (vii) a vessel used in the exploration or exploitation of off-shore mineral resources;
- (f) "Minister" means the Minister of Industry;
- (g) "shipbuilder" means a citizen of Canada or a company incorporated in Canada that is engaged in Canada in the business of building ships in Canada;
- (h) "shipowner" means a citizen of Canada, a company incorporated in Canada, a Canadian municipal corporation, or Her Majesty in right of any Province of Canada; and
- (i) "subsidy" means the amount of capital subsidy payable in respect of an eligible ship pursuant to these Regulations.

Payment of Subsidy.

3. (1) Where money is voted by Parliament for the purpose of capital subsidies for the construction of commercial and fishing vessels, a subsidy may be paid for an eligible ship the construction of which did not commence before January 1, 1966, and which was not the subject of a ship-building contract entered into before January 1, 1966.

(2) The amount of a subsidy shall be determined in accordance with section 6 and may, subject to these Regulations, be paid in accordance with an agreement entered into pursuant to section 4.

4. Where an application is made for a subsidy in respect of an eligible ship, the Minister may, subject to any terms or conditions established by the Treasury Board, enter into an agreement with the shipowner and the shipbuilder thereof or, where the eligible ship is built by the owner for his own use, with the shipowner thereof, providing for the payment of the subsidy.

5. An application for a subsidy shall be in the prescribed form and shall be made within 60 days of the day on which the contract for the construction of the eligible ship was entered into or within such other time as the Minister may, in his discretion, allow.

Amount of Subsidy.

6. (1) The subsidy for an eligible ship that is not a fishing trawler shall be an amount not exceeding

- (a) 25% of the approved cost where the eligible ship is completed during the period commencing January 1, 1966 and ending May 31, 1969;
- (b) 23% of the approved cost where the eligible ship is completed during the period commencing June 1, 1969 and ending May 31, 1970;
- (c) 21% of the approved cost where the eligible ship is completed during the period commencing June 1, 1970 and ending May 31, 1971;
- (d) 19% of the approved cost where the eligible ship is completed during the period commencing June 1, 1971 and ending May 31, 1972; or
- (e) 17% of the approved cost where the eligible ship is completed after May 31, 1972.

(2) The subsidy for an eligible ship that is a fishing trawler shall be an amount not exceeding 50% of the approved cost.

(3) Where an eligible ship is completed later than the date on which it might reasonably be expected to have been completed by causes beyond the control of the shipowner and shipbuilder, the Minister may, in his discretion, declare the ship to have been completed on a day earlier than the day on which it was completed and the amount of the subsidy therefor shall be determined in accordance with that declaration.

(4) Where proceeds from a disposition after May 12, 1961 of any vessel, ship or boat, that are by law for the purposes of an income tax

permitted to be excluded from the taxable income of the recipient thereof as a recaptured capital cost allowance, are used by a shipowner in paying for an eligible ship, the amount of the subsidy for the eligible ship shall be reduced by the amount by which the income tax payable by that recipient would have been increased had the exclusion not been permitted.

(5) Subsection (4) does not apply where the disposition was by way of a hire purchase agreement entered into prior to May 12, 1961.

Agreements.

7. Every agreement entered into pursuant to these Regulations shall provide for

- (a) payment of the subsidy by a lump sum or by progress payments not exceeding in the aggregate 80% of the subsidy before the eligible ship is completed and the balance thereafter;
- (b) the keeping of accurate and complete accounts of expenditures and records of related matters by the shipowner and the shipbuilder and the audit of the accounts and the inspection of the records by persons authorized by the Minister for that purpose at any time before the second anniversary of the final payment of the subsidy;
- (c) an undertaking by the shipowner that the eligible ship will be owned by a shipowner and kept on Canadian registry for at least the five year period immediately following the day the eligible ship is completed and in the event the undertaking is not carried out, an obligation by the shipowner applying for the subsidy to pay to Her Majesty, on demand, an amount equal to the product obtained by multiplying the amount of the subsidy by the fraction of the five year period that the undertaking is not carried out; and
- (d) such other matters as the Minister considers necessary or appropriate to protect the interests of Her Majesty or to carry out the intent of Parliament and these Regulations.

Ship Construction Assistance Regulations.

8. (1) No assistance may be paid under the *Ship Construction Assistance Regulations* in respect of the construction of an eligible ship for which a subsidy may be paid under these Regulations.

(2) Except as otherwise provided in subsection (1), nothing in these Regulations affects the payment of assistance under the *Ship Construction Assistance Regulations*.

Powers of Minister.

9. The Minister may for the purposes of these Regulations

- (a) authorize persons to sign agreements for him;
- (b) investigate the financial responsibility of a shipowner or shipbuilder and such other matters as he considers necessary to determine questions relating to eligibility or approved cost; and
- (c) prescribe forms and make rules relating to the application for and the payment of subsidies.

APPENDIX V

DRAWBACK REGULATIONS, 1963 and 1966

DEPARTMENT OF NATIONAL REVENUE
CUSTOMS AND EXCISE

MEMORANDUM D17-2

Ottawa, 3rd September 1963

DRAWBACK ON GOODS USED IN SHIPS BUILT OR REBUILT IN CANADA

The following regulations are established by Order in Council P.C. 1963-1192, dated 14th August 1963, authority Customs Act.

REGULATIONS

1. These Regulations may be cited as the **Ship Construction Drawback Regulations**.
2. A drawback of ninety-nine per cent may be allowed of the Customs duties, not including special or dumping duty, paid on imported goods that are used in Canada in the original construction of
 - (a) ships having within themselves the power of independent navigation and that
 - (i) are to be used for bona fide commercial fishing operations, or
 - (ii) measure ten tons register tonnage or more and are to be used for other than pleasure purposes; or
 - (b) barges and scows built of iron or steel and measuring more than one thousand tons gross tonnage.
3. A drawback of ninety-nine per cent may be allowed of the Customs duties, not including special or dumping duty, paid on imported goods that are used in Canada in the reconstruction of ships entitled to engage in the coasting trade of Canada and having within themselves the power of independent navigation when such reconstruction alters the width, depth or length of the ship or substantially converts it for the performance of a different type of operation.
4. A claim for drawback shall be made by the builder or rebuilder of the ship, as the case may be.
5. Claims for drawback shall be made under oath before a Collector of Customs and Excise, a Justice of the Peace, a Notary Public or a Commissioner authorized to take affidavits and in such form as the Minister of National Revenue prescribes.
6. All claims for drawback shall be filed with a Collector of Customs and Excise and shall be accompanied by complete documentary evidence including the following documents;
 - (a) a copy of the import entry showing the payment of the Customs duties on the goods used on which drawback is claimed or, where a copy of the import entry has been furnished with a previous claim for drawback, by a reference to such copy indicating the claim to which it was attached; and
 - (b) when the claimant entitled to drawback is not the importer of the goods, a certificate of importation, sale or transfer in the form prescribed by the Minister.
7. No claim for a drawback shall be allowed unless
 - (a) the claim is for a drawback of not less than ten dollars, or
 - (b) the claim is one of a group of claims for drawback that are filed at the same time and the aggregate of the claims amounts to not less than ten dollars.
8. No claim for a drawback shall be considered unless the Customs duties on the goods in respect of which the drawback is claimed were paid
 - (a) in the case of goods used in connection with a naval shipbuilding programme of the Government of Canada within five years prior to the date of filing the claim; and
 - (b) in the case of all other goods, within three years prior to the date of filing of the claim.
9. The Minister of National Revenue may require, in respect of any claim, the production of such further evidence as he deems necessary to establish the validity of a claim.

INSTRUCTIONS

Note provisions as to limitations of time for filing drawback claims under these Regulations. Claim should cover goods used in the original construction or reconstruction of one ship only.

Goods used as furnishings or equipment of vessels beyond that required by a recognized classification society are ineligible for drawback.

Drawback forms, as follows, may be obtained in quantity required from the nearest Collector:

Form K 34 (claimant's oath and statement of claim), complete with all relative documents, required to be typed or legibly written in ink and filed in triplicate, at a Customs port together with a last sheet summary or at an outport with a last sheet summary in duplicate.

Form K 34A (certificate of classification and registration), required in duplicate. When a ship is not classed or registered the form may be amended to show qualifying status.

Form K 32A (certificate of importation, sale or transfer), required in duplicate when the claimant is not the importer of the goods used.

Detailed information may be obtained at District Drawback Offices located at Amherst, N.S., Montreal and Quebec City, P.Q., Ottawa, Oshawa, Toronto, Hamilton, London and Windsor, Ont., Winnipeg, Man., Calgary, Alta., and Vancouver, B.C.



David Sim,
Deputy Minister of National Revenue,
Customs and Excise.

* (Memorandum D17-2 2/1/58 is superseded)

DEPARTMENT OF NATIONAL REVENUE
CUSTOMS AND EXCISE

MEMORANDUM D17-2

Ottawa, 26th May 1966

DRAWBACK ON GOODS USED IN SHIPS BUILT OR REBUILT IN CANADA

The following regulations are established by Order in Council P.C. 1966-867, dated 13th May 1966, authority Customs Act.

REGULATIONS

1. These Regulations may be cited as the **Ship Construction Drawback Regulations**.

2. A drawback of ninety-nine per cent may be allowed of the Customs duties, not including special or dumping duty, paid on imported goods that are used in Canada in the original construction of

- (a) ships having within themselves the power of independent navigation and that
 - (i) are to be used for bona fide commercial fishing operations, or
 - (ii) measure ten tons register tonnage or more and are to be used for other than pleasure purposes; or
- (b) barges and scows built of iron or steel and measuring more than one thousand tons gross tonnage.

3. A drawback of ninety-nine per cent may be allowed of the Customs duties, not including special or dumping duty, paid on imported goods that are used in Canada in the reconstruction of ships entitled to engage in the coasting trade of Canada and having within themselves the power of independent navigation when such reconstruction alters the width, depth or length of the ship or substantially converts it for the performance of a different type of operation.

4. A claim for drawback shall be made by the builder or rebuilder of the ship in such form as the Minister of National Revenue prescribes and shall be filed with a Collector of Customs and Excise with complete documentary evidence in support thereof.

5. No claim for a drawback shall be allowed unless

- (a) the claim is for a drawback in respect of ship construction or reconstruction contracted for prior to the 1st day of January, 1966; and
- (b) the claim
 - (i) is for a drawback of not less than ten dollars, or
 - (ii) is one of a group of claims for drawback that are filed at the same time and the aggregate of the claims amounts to not less than ten dollars.

6. No claim for a drawback shall be considered unless the Customs duties on the goods in respect of which the drawback is claimed were paid

- (a) in the case of goods used in connection with a naval shipbuilding programme of the Government of Canada within five years prior to the date of filing the claim; and
- (b) in the case of all other goods, within three years prior to the date of filing of the claim.

7. The Minister of National Revenue may require, in respect of any claim, the production of such further evidence as he deems necessary to establish the validity of a claim.

INSTRUCTIONS

1. Note provisions as to limitations of time for filing drawback claims under these Regulations. Claim should cover goods used in the original construction or reconstruction of one ship only.

2. Goods used as furnishings or equipment of vessels beyond that required by a recognized classification society are ineligible for drawback.

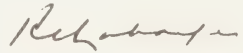
3. Drawback claim on form K 32 is to be typed or legibly written in ink and filed, in triplicate, at a Customs port or outport.

4. The original and one copy of Certificate of Importation, Sale or Transfer, form K 32A, are required when the claimant is not the importer of the goods on which drawback is claimed.

5. Detailed information regarding drawback qualifications and requirements may be obtained at District Drawback offices located at:

Amherst, Nova Scotia
Quebec, Quebec
Montreal, Quebec
Ottawa, Ontario
Oshawa, Ontario
Toronto, Ontario
Hamilton, Ontario
London, Ontario
Windsor, Ontario
Winnipeg, Manitoba
Calgary, Alberta
Vancouver, B.C.

Dominion Public Bldg., 98 Victoria Street.
Custom House, 2 St. Andre, P.O. Box 2267.
Custom House, 400 Youville Square.
Connaught Bldg., MacKenzie Avenue.
Federal Bldg., 47 Simcoe Street, P.O. Box 428.
Dominion Public Bldg., 1 Front Street West.
Dominion Public Bldg., 10 John St. South, P.O. Box 766.
Dominion Public Bldg., 457 Richmond Street, P.O. Box 97.
Dominion Public Bldg., 185 Ouellette Avenue.
Federal Bldg., 269 Main Street.
Custom Bldg., 134-11th Avenue S.E.
Custom House, 1001 West Pender Street.



Raymond C. Labarge,
Deputy Minister of National Revenue,
Customs and Excise.

APPENDIX VI

APPLICATION FORM FOR SHIP CONSTRUCTION ASSISTANCE

CANADIAN MARITIME COMMISSION

Ottawa 4, August 15, 1962.

Dear Sirs:

Re: Application for Ship Construction Assistance
Regulations

Many applications are being received without adequate documentation required by paragraphs 1 to 6 on the application form. This causes difficulty and delay in the processing of such applications. In order to avoid unnecessary delay in processing, applications should be complete with the following information noted on the application form signed by the ship-owner and shipbuilder:

- (1) Drawings submitted will require to be listed on form, i.e., number of plans with identifying figures or name of plan.
- (2) Date and number of specification will require to be listed on form, i.e., specification so many pages inclusive dated
- (3) Firm price for the vessel will require to be listed on form. This is to be the firm contract price but if not available enter estimated price.
- (4) Non-Canadian content in detail of maker, price, etc., will require to be listed in form of a statement attached to the application but signed application itself will require to have the notation items 1 to . . inclusive with total value.
- (5) Proposed construction progress chart to be attached and so noted on the form.
- (6) The percentage of Canadian content will require to be entered on form here.

The application forms are simple and we feel the data requested is the minimum required to establish a reasonable processing set-up. It would be appreciated, therefore, if the foregoing guidance request could be complied with in order that good, businesslike processing, without delay, can be achieved.

It should be understood that if an estimated price is used instead of the contract price, very little progress can be made with processing the application and, therefore, firm prices should be procured with all despatch possible.

Yours very truly,

H. K. McIntosh,
Technical Officer.

HKM:lt

JUNE 1st, 1962.

SHIP CONSTRUCTION ASSISTANCE APPLICATIONSNOTES RE DOCUMENTS REQUIRED BY THE CANADIAN MARITIME COMMISSIONITEMS 1 AND 2 - General Arrangement Drawing and Specification

These should be in sufficient detail to enable the Commission to evaluate the cost of construction.

ITEM 3 - CONTRACT PRICE

This is to be a firm price with the shipbuilder and may include reasonable Canadian design fees only. Owners' supervision fees, extras or escalation are not to be included. This will be the price on which subsidy will be recommended.

Fishing Vessels - only fishing gear permanently attached to vessel may be included in contract price. Loose and expendable fishing gear such as nets, drag lines, etc., are not to be included.

Where components are to be supplied by owner, separate prices for each component are to be supplied supported by either firm quotations from suppliers or by invoices.

Equipment installed on a rental basis not eligible for subsidy.

Used machinery or equipment is not eligible for subsidy. Reconditioning expenses will be considered when supported by firm quotations or invoices from Canadian companies doing overhaul.

Original or authenticated copy of contract between ship-owner and shipbuilder will be required for the Agreement between the Canadian Maritime Commission, ship-owner and shipbuilder.

ITEM 4 - LIST AND COST OF EACH ITEM OF NON-CANADIAN MATERIAL AND EQUIPMENT AND NAME OF MANUFACTURER

This should be a complete and detailed list of each item to be imported and should be made up under the following headings:-

<u>ITEM</u>	<u>MANUFACTURER</u>	<u>COST</u>	<u>EQUIVALENT CANADIAN PRICE & MANUFACTURER.</u>
-------------	---------------------	-------------	--

As it is essential that Canadian manufacturers in a production line be given the opportunity to quote for Canadian materials satisfactory for the purpose intended, it will be necessary for the ship-owner or shipbuilder to provide quotations or other information covering Canadian prices with application.

ITEM 5 - PROPOSED CONSTRUCTION PROGRESS CHART

This chart should give the scheduled dates of keel laying, launching, installation of machinery and completion of vessel.

ITEM 6 - PERCENTAGE CANADIAN CONTENT, LABOUR AND MATERIAL IN CONSTRUCTION

This percentage should be based on the total cost of vessel including components supplied by owner and is calculated as follows:-

Total contract price minus cost of non-Canadian content, the remainder divided by the total contract price.

APPLICATION FOR
SHIP CONSTRUCTION ASSISTANCE

OWNER:

Address:

SHIPBUILDER:

Address:

TYPE OF VESSEL AND PROPOSED USE:

WOOD OR STEEL CONSTRUCTION:

TYPE OF MACHINERY, H.P. AND MANUFACTURER:

LENGTH OVERALL: BREADTH: DEPTH:

DRAFT: SPEED: TONNAGE (Approx.)

DEADWEIGHT: DISPLACEMENT:

COMMENCEMENT DATE: DELIVERY DATE:

DOCUMENTS REQUIRED BY THE CANADIAN MARITIME COMMISSION FOR INFORMATION
AND RECORDS:

1. GENERAL ARRANGEMENT DRAWING IN SUFFICIENT DETAIL TO INDICATE TYPE
OF VESSEL AND GENERAL PARTICULARS.
2. SPECIFICATION IN SUFFICIENT DETAIL TO INDICATE TYPE OF MACHINERY,
OUTFIT AND EQUIPMENT TO BE INSTALLED.
3. CONTRACT PRICE OF VESSEL.
4. LIST AND COST OF EACH ITEM OF NON-CANADIAN MATERIAL AND EQUIPMENT
AND NAME OF MANUFACTURER.
5. PROPOSED CONSTRUCTION PROGRESS CHART.
6. % CANADIAN CONTENT, LABOUR AND MATERIAL IN CONTRACT (%)

SHIP-OWNER

SHIPBUILDER

DATE:



CANADA

Tariff Board

///

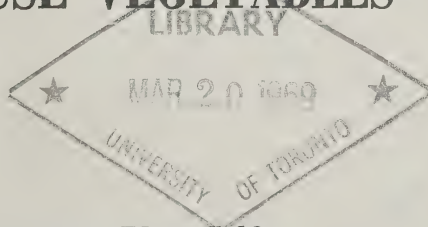
Report by

of **THE TARIFF BOARD**

Reference 757

(
Relative to the Investigation Ordered
by the Minister of Finance
respecting
)

GREENHOUSE VEGETABLES



Reference No. 140

CAI FN 55
-62R40



Report by

THE TARIFF BOARD

Relative to the Investigation Ordered
by the Minister of Finance
respecting

GREENHOUSE VEGETABLES

Reference No. 140

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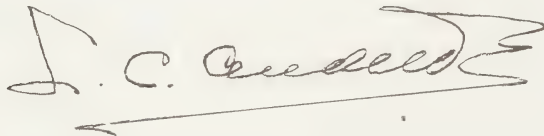
The Honourable
The Minister of Finance
Ottawa

Dear Mr. Minister:

I refer to your letter of January 3, 1968, in which you directed the Tariff Board to make a thorough study of the competitive relationship between the Canadian greenhouse vegetable growing industry and imports of field grown vegetables.

In conformity with Section 6 of the Tariff Board Act, I have the honour to transmit the Report of the Board relating to greenhouse vegetables and imported field grown vegetables competitive therewith, in English and in French. A copy of the transcript of the proceedings at the public hearings accompanies the Report.

Yours faithfully,

A handwritten signature in dark ink, appearing to read "J. C. Audette", with a long horizontal flourish extending to the right.

Chairman

Explanation of Symbols Used

- Denotes zero or none reported
- .. Indicates that figures are not available
- * In statistical tables, indicates a reported figure which disappears on rounding, or is negligible
- (a) A small letter in brackets denotes a footnote to a table
- (1) A number in brackets denotes a footnote to the text
- s.c. Denotes a Dominion Bureau of Statistics import or export statistical class
- (p. --) Denotes a page from the transcript of proceedings at the public hearing unless the context clearly indicates another cited reference

The sum of the figures in a table may differ from the total, owing to rounding

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Ottawa, January 3, 1968

Mr. L.C. Audette
Chairman
The Tariff Board
Ottawa.

Dear Mr. Audette:

The Government has received representations concerning imports of field grown tomatoes and cucumbers which are said to be having serious adverse effects on Canadian greenhouse growers. In the circumstances it appears desirable that the Tariff Board make a thorough study of the competitive relationship between the Canadian greenhouse vegetable growing industry and imports of field grown vegetables.

Cucumbers are dutiable under tariff item 8712-1 and tomatoes under tariff item 8724-1. I would, therefore, direct the Tariff Board to make a study and report under section 4(2) of the Tariff Board Act on the effect on trade, production and consumption of the rates of duty provided for under items 8712-1 and 8724-1. The Board may also include in its study other tariff items relating to fresh vegetables if it considers them relevant to its review of the Canadian greenhouse vegetable growing industry.

If the Board's study should indicate that amendments to the Customs Tariff are desirable, I would request the Board to include in its report recommendations regarding any such amendments.

I would ask the Board to submit its report on this reference as soon as may be consistent with a thorough examination of these matters.

Yours sincerely,

MITCHELL SHARP

Date of Public Hearing
and
List of Companies and Agencies
Which Made Representations

A public hearing before the Board was held at Ottawa on April 1, 2 and 3, 1968.

Representations were received from the following:

The Canadian Consumers' Protest Association (represented by the Ottawa Consumers' Protest Association)	Ottawa, Ontario
The Commercial Counsellor to Canada, Government of Mexico	Toronto, Ontario
The Consumers' Association of Canada	Ottawa, Ontario
* The Greenhouse Growers of Nova Scotia	Truro, Nova Scotia
* The H.J. Heinz Company of Canada Ltd.	Leamington, Ontario
* Maple Ridge Hothouse Growers' Association	Haney, British Columbia
* The Ontario Farmers' Union, Local 374	Leamington, Ontario
The Ontario Fruit and Vegetable Growers' Association	Toronto, Ontario
The Ontario Greenhouse Vegetable Producers' Marketing Board	Leamington, Ontario
* The Ontario Vegetable Growers' Marketing Board	Hamilton, Ontario
The Quebec Wholesale Fruit and Vegetable Association	Montreal, Quebec
* The Red Hat Cooperative Limited	Medicine Hat, Alberta
Steinberg's Limited	Montreal, Quebec
* Vancouver Island Greenhouse Growers	Victoria, British Columbia

* Not represented at the hearing

Introduction

In his letter to the Tariff Board, the Minister of Finance wrote that "it appears desirable that the Tariff Board make a thorough study of the competitive relationship between the Canadian greenhouse vegetable growing industry and imports of field grown vegetables." He went on to say "I would, therefore, direct the Tariff Board to make a study and report ... on the effect on trade, production and consumption of the rates of duty provided for under items 8712-1 and 8724-1". Item 8712-1 relates to cucumbers for fresh use, item 8724-1 to tomatoes.

Both products are entered duty-free under the British Preferential Tariff. Under the M.F.N. Tariff, cucumbers are subject either to a rate of 10 p.c., or to a specific rate of $2\frac{1}{4}$ cents per pound. The specific rate is not to be maintained in force in excess of 22 weeks in any 12-month period, ending March 31st; the 22 weeks may be divided into two separate periods. Tomatoes enter duty-free under the M.F.N. Tariff during January, February and March; for the other months, either a rate of 10 p.c. applies or a specific rate of $1\frac{1}{2}$ cents per pound. The specific rate is not to be maintained in force in excess of 32 weeks in any 12-month period ending March 31st. Moreover, under the authority of Section 13 of the Customs Tariff, the specific duty may be applied regionally and for different periods of time in different regions.

In general terms, cucumbers have been dutiable at Free, B.P. and 10 p.c., M.F.N. when neither the greenhouse nor field product was available from Canadian production, and at Free, B.P. and $2\frac{1}{4}$ cents per pound, M.F.N., from the time that the greenhouse product was available until the field crop harvest was ended. Also in general terms, tomatoes are entered free of duty from January until March; at Free, B.P. and 10 p.c., M.F.N., during the period when greenhouse tomatoes are available; and at Free, B.P. and $1\frac{1}{2}$ cents per pound, M.F.N., when domestic field tomatoes become available. Thus, the specific duty on cucumbers is used to protect both the greenhouse and field crops while the specific duty on tomatoes has been used to protect only the field crop.

At the public hearing in April, 1968, a number of producers of greenhouse vegetables proposed that for cucumbers a specific rate of $4\frac{1}{2}$ cents a pound be applied in the months of March to June, inclusive. This proposal, in effect, would quadruple the existing rate during March, and double it during April, May and June. For tomatoes, they proposed that a specific rate of 5 cents a pound be applied in April, May and June, and during October and November. The proposal of the producers would involve an increase in duty equivalent to nearly 4 cents a pound at the time of the spring crop and an increase equivalent to about $3\frac{1}{2}$ to 4 cents a pound at the time of the fall crop.

Some consumers and dealers opposed the proposals of the greenhouse vegetable producers and urged that cucumbers and tomatoes for fresh use be entered free of duty during the seasons when Canadian field-grown produce is not available, or that the existing tariff during the greenhouse production seasons not be increased.

In support of their proposals, the producers claimed that the effect of increasing imports of cucumbers and tomatoes on prices of Canadian greenhouse vegetables was such that their industry was being

endangered. They said that their costs were too high relative to their returns to continue profitable operation and they were particularly apprehensive about the threat of a continuing rapid expansion of imports of cucumbers and tomatoes from Mexico.

The consumers and dealers expressed concern at the anticipated high cost to consumers of the proposed increases in duties, and claimed that the cost to the Canadian public was likely to be disproportionately large relative to the benefits that would accrue to Canadian greenhouse operators. They also said that it would be unrealistic to encourage an industry which used an artificial environment to grow vegetables in competition with imported field-grown cucumbers and tomatoes.

Field tomatoes and cucumbers require environmental conditions, particularly heat and light, which limit their commercial production to a few relatively small areas of Canada. Moreover, they require a long growing season, about three months, and, in most locations, have a fairly short harvesting season, of less than two months. Their profitable production is made more difficult because they are perishable vegetables which deteriorate rapidly. Unlike potatoes, cabbages, onions and carrots, tomatoes and cucumbers have a saleable life, after harvest, of only two or three weeks.

Thus, local, field-grown tomatoes and cucumbers are available commercially from Canadian production only for a short time and only in a relatively few favoured locations; the demand for tomatoes and cucumbers in the remainder of the year and in other locations must be supplied by greenhouse crops or by other countries. Even the most favorably located parts of the country, climatically, must rely on foreign supplies of fresh cucumbers and tomatoes during nine months of the year, except to the extent that they are available from domestic greenhouse production.

In North America, only the most southern states of the U.S.A., Mexico and the Central American states have a climate sufficiently warm to permit producing cucumbers and tomatoes when it is too cold for their production in Canada. As a result, the field-grown cucumbers and tomatoes which are consumed in Canada between approximately mid-October and mid-July originate mainly in California, Florida and Mexico. The distance from the nearest producing areas, in Florida, to the nearest major markets in Canada (Toronto and Montreal) is more than 1,000 miles; distances from other North American producing areas (during the off-season for Canadian field-grown produce) to Canadian markets are even greater.

It is costly to move such very perishable commodities long distances through regions in which temperatures may range from 80° F. in the south to fifteen or more degrees below zero F. at their northern destinations. This cost, exclusive of duty, was between approximately three and five cents a pound on tomatoes imported into Toronto in 1968 and valued, f.o.b. shipping point, at ten cents a pound; duty, at 10 p.c., would add another cent a pound during the period when Canadian field-grown tomatoes are not available. The comparable cost of moving greenhouse-grown tomatoes from Leamington, Ontario to Toronto is about one cent a pound, leaving an advantage of three to five cents a pound, inclusive of duty.

Apart from this advantage, greenhouse tomatoes are usually sold in Canada, at the wholesale level, at a premium of some 10 to 15 cents a pound, or more, over imported field-grown tomatoes of comparable grade and size. The price premium on greenhouse-grown tomatoes, and the protection afforded by distance and customs duty, constitute the principal inducements to the production of these commodities in greenhouses in Canada.

Greenhouses permit virtually complete control over the environment of plants. Temperature, humidity, composition of the air (mainly its carbon dioxide content), soil moisture, soil nutrients, soil-borne and air-borne diseases, and insects are controlled in greenhouses; the amount of light is not usually controlled in vegetable greenhouses, although artificial light is used in many flower-producing greenhouses to compensate for lack of sunlight and to hasten maturity as required.

Thus, in theory, a greenhouse can be built anywhere and be used to produce any common fruit or vegetable. In practice, vegetable greenhouses tend to be concentrated in relatively small areas in only a few parts of Canada. Partly, this is because fuel costs are a large proportion of the operating costs (one-third or more) and this cost is lower in warmer localities such as Essex County or where costs of fuel are low, as around Medicine Hat, Alberta. Partly, it is because growing vegetables in greenhouses requires a considerable amount of technical knowledge of cultural practices and plant requirements, and greenhouses tend to be established in places where experienced labor and management is available. Other factors are also involved in determining the location of vegetable greenhouses, not the least of which is relatively close proximity to major markets.

How Greenhouse Vegetables Are Produced

The sizes, designs and construction of greenhouses vary between different regions in Canada and also within each area. Cultural practices also differ. However, in spite of such differences, there is a general similarity in the way greenhouse vegetables are grown in all regions of Canada. The following description is based on practices generally followed in the Leamington area of Essex County; this area accounts for more than three-quarters of the value of sales of all greenhouse vegetables produced in Canada. The descriptions relate only to cucumbers and tomatoes.

In the Leamington area, it is the usual practice to grow a spring crop of tomatoes or cucumbers or both and to follow this with a fall crop of tomatoes. Yields are always much higher for the spring crop of tomatoes than for the fall crop. Cucumbers are rarely, if ever, grown as a fall crop.

For a crop of spring tomatoes, seed is planted in November and December in flats or similar containers and after two transplantings of the young plants in bands or pots the plants are set out in the greenhouse where they are to grow and bear fruit. This final transplanting is in late January to early February and tomatoes are harvested mainly in April, May and June. The plants will continue to produce tomatoes in July and even August but in these latter months greenhouse

tomatoes must compete with domestic field-grown tomatoes and harvesting of greenhouse tomatoes will continue only if prices justify it and if this late harvesting will not interfere with the planting of the fall crop.

The soil in the greenhouse must be "sterilized" before the tomato plants are set out because of the hazard of soil-borne plant diseases. The soil temperature is raised to 180° F. and held there for about 20 minutes; such a combination of temperature and time is sufficient to kill most plant pathogens. Soil sterilization is carried out in January. The fall crop harvest is usually over by mid-December and the greenhouse is cleared of plant debris. In the Leamington area soil sterilization is carried out by covering the bare soil with sheets of plastic to contain the steam used and to ensure an even distribution of the heat. The steam is introduced into the soil through rows of clay tile about three inches in diameter, usually set out about four feet apart and which are permanently buried about 15 inches below the surface of the soil and are covered with two inches of crushed stone and then earth. These hollow tiles are each about 12 inches long and permit the steam to escape at the joints between adjacent tiles and through the porous surface of the tiles.

These rows of tiles are also used to supply water to the plants by connecting them to a water line instead of the steam line. Frequently, a special mixing pump is used which automatically mixes hot water from the boiler with the incoming cold water according to a predetermined ratio so that the plants are watered with warm water. The use of cold water for irrigation tends to retard the growth of the plants. Fertilizer is also usually supplied through the tiles. The fertilizer is dissolved in a large container, commonly a concrete pit and the automatic pumping and mixing system is used to mix the fertilizer solution with the irrigation water in a predetermined ratio and to apply the mixture through the underground tile system.

Humidity is always high in greenhouses and is controlled by opening or shutting appropriately positioned windows. Large electric fans are sometimes used in conjunction with openings to control humidity. Plastic-covered greenhouses are more airtight than those of glass and control of humidity is therefore more important in such greenhouses. Fans are, therefore, more frequent in plastic greenhouses, the air current usually being directed into a long perforated plastic "sleeve", about 24 inches in diameter, better to distribute the air blown by the fan and to avoid currents of cold air being directed at the plants.

Both tomato and cucumber plants are treated in much the same way. However, cucumber plants take less kindly to transplanting and therefore must be handled more carefully. Also, cucumbers were said to require a somewhat more humid environment for optimum growth. Fertilizer and pesticide requirements are also different. Nevertheless, the methods of soil sterilization, watering, pest control and application of fertilizer are generally similar for both vegetables. Pesticides are frequently applied by use of a shoulder pack pumping device to apply the solution or dust under pressure; in larger greenhouses powered pumping devices are used.

As the plants begin to grow in the greenhouse they are trained on twine. This causes the plant to grow vertically, as nearly as possible, and minimizes the space needed for each plant, an important

consideration in greenhouse operation. It also ensures that the fruit is borne off the ground and minimizes blemishes and other damage as well as losses from soil-borne diseases. Currently, twine made from natural materials is being supplanted by plastic twine, at least partly because twine made from natural fibres is susceptible to fungus diseases and may infect the plant to which it is attached.

Soon after the plants are transplanted and their roots become established in the greenhouse soil they are mulched by placing manure, straw or other common mulching materials around them. Mulching conserves moisture and helps to maintain an even soil temperature. More manure per plant is used for cucumbers than for tomatoes.

Tomatoes and white spine varieties of cucumbers produce fruit only if the female flowers are pollinated. Cucumber flowers are pollinated by bees kept for this purpose. Tomato flowers cannot be pollinated properly by bees and pollinization is accomplished by touching a vibrating device, called a "buzzer", to each flower cluster in order to dislodge the pollen.

During the growing season fertilizer and water are supplied as required and pesticides are used to control a variety of diseases and to minimize insect damage. As the plants grow they are trained around the twine which is secured above the plant and various hand operations are performed, such as removal of suckers from tomato plants.

The spring crop of cucumbers begins to ripen near the end of February but it is usually around the first week of April that they are available in significant volume. Tomatoes take somewhat longer to mature, the harvest beginning about mid-April and achieving significant volume about a month later. The peak production period for both greenhouse cucumbers and tomatoes is in June and continues into the first part of July. The harvest can be prolonged but this is ordinarily uneconomic because prices decline sharply around the middle of July as Canadian field-grown vegetables begin to be available. Another limitation on extending the harvest season is that the greenhouse must be cleared and made ready to set out the plants which produce the fall crop of tomatoes. For a fall crop of tomatoes the plants must be set out in the greenhouse late in July or early in August. Allowing for the time required to clear the greenhouse and sterilize the soil, mid-July is about the latest that the spring crop of greenhouse cucumbers or tomatoes would ordinarily be harvested.

Fall tomatoes are produced in the same way as spring tomatoes. The plants are usually grown from seed and are transplanted into the greenhouse late in July or early in August. Harvesting begins in October and is largely completed by the beginning of December. In the Leamington area, November is the peak month for harvesting fall tomatoes. However, fall yields are very much lower than in spring and, as a result, November marketings are substantially less than those in June, even though much more greenhouse space is used for fall production because most of the space used for spring cucumbers is available.

In a general way, the foregoing description of how cucumbers and tomatoes are grown in greenhouses would apply to all parts of Canada, in spite of the considerable variations which exist in size, design and construction of greenhouses, differences in hours of sunlight

during the growing seasons and so on. A major regional difference in cultural practice is in soil sterilization; in the Leamington area, steam is the common sterilant; in British Columbia, chemicals, such as chloropicrin, are used for this purpose. Around Medicine Hat the usual practice is to use steam to sterilize the soil but the use of chemicals for this purpose is not uncommon.

The principal type of cucumber grown in Canadian greenhouses is of the white spine varieties. This is the familiar slicing type. In British Columbia, and to an increasing extent in Ontario, the Long English cucumber is also grown although its production accounts for a very small proportion of the greenhouse cucumber crop. The Long English cucumber, as its name implies, is much longer than the white spine type, usually being at least 12 inches long. It is of smaller diameter and is straight, smooth-skinned and seedless; it is said to have a milder flavour.

Two main varietal types of tomatoes are grown, reds and pinks. The reds are the popular kinds in most regions and, when mature, have the intense red color usually associated with tomatoes. The pinks are lighter in color and less acidic. These sweeter varieties of tomatoes are more popular than the reds in the Province of Quebec and dealers in the Montreal area pay a substantial premium for greenhouse pink varieties. The pinks are the principal varieties grown by greenhouse operators in Ohio, the main greenhouse area adjacent to Canada and the largest greenhouse vegetable producing area in North America.

Regional Differences in Cropping Practices

In Essex County, greenhouse growers who produce vegetables usually produce only vegetables, spring and fall. In other parts of Canada, including Ontario elsewhere than Essex County, it is more usual to follow the spring crop of vegetables with a crop of fall flowers or potted plants. In 1966, only in Essex County and British Columbia did greenhouse vegetable producers obtain more than one-half of their sales revenue from vegetables. In other parts of eastern Canada sales of greenhouse vegetables, by producers who reported sales of any greenhouse vegetables in that year, constituted from 34 to 43 per cent of the total greenhouse sales revenue; in the Prairie Provinces vegetables accounted for only 11 per cent of total sales of greenhouse products.

Table 1

Revenue From Sales of Vegetables As a Per Cent of Sales Value
of All Greenhouse Products, For Establishments Reporting
Sales of Any Greenhouse Vegetables, in 1966

	<u>Value of Sales</u>		Vegetables As % Of All Greenhouse Products
	<u>Vegetables</u>	<u>All Greenhouse Products</u>	
	- \$'000	-	per cent
Atlantic Provinces	385	1,140	33.8
Quebec	27	66	40.9
Ontario	3,611	4,684	77.1
Essex County	2,840	2,888	98.3
Other Ontario	771	1,795	43.0
Prairie Provinces	173	1,522	11.4
British Columbia	<u>507</u>	<u>704</u>	<u>72.0</u>
Canada	4,703	8,116	57.9

Source: Derived from D.B.S. data

Greenhouse Construction and Equipment

Greenhouse design and construction varies both between regions and within any region. The typical greenhouse has a peaked roof, a framework of metal, wood, or a combination of these materials and is covered with glass. The roof construction may be such as to allow clear internal spans, or the roof may be supported partly by internal posts. The kinds of materials and designs used affect both the life expectancy of the greenhouse and the cost of its construction.

In fairly recent years the plastic-enclosed greenhouse has become important in some regions. In these greenhouses, translucent plastic films replace glass. Because the plastic films are only a fraction of the weight of glass, per unit area, frameworks that are required to support plastic can be very much lighter and cheaper.

The main disadvantages in the use of plastics are that the commonly-used types must be replaced every year and that the use of plastic results in a more airtight structure and, therefore, more careful provisions must be made for ventilation and air circulation, generally through the use of large fans and at some additional cost. The principal advantages arising out of the use of plastic films are that the initial costs are considerably less than for glass and that the more airtight construction results in somewhat lower heating costs even when a single layer of plastic is used. When the recommended double layer of plastic is used to cover the greenhouse the reduction in costs of heating becomes significant.

In general, there seems to have been some tendency to build plastic greenhouses as makeshifts and to use cheap materials and barely adequate designs in their construction. However, standard designs have been developed which result in life expectancies of 20 years and which allow for the easy removal and replacement of the plastic films.

A Tariff Board compilation of available data of greenhouse vegetable operations indicated that, by 1966, something over 10 per cent of the greenhouse space used by producers of vegetables was enclosed by plastic. The extent to which plastic was used varied from less than one per cent of the total in Quebec to 28 per cent of the total in Nova Scotia. Apart from Quebec, plastic tends to be used to a much greater extent east of the Great Lakes than in Western Canada.

Except for Essex County, data are not available relating to the construction of glass and plastic greenhouses in recent years. However, Essex is predominantly a vegetable producing area and construction trends in the county are significant because of the importance of this area as the producer of about 75 per cent of Canada's greenhouse vegetables.

In Essex County, in the six years for which data are available (1962-67) new greenhouse construction covered an area of 124 acres, of which 63 acres, more than half, was enclosed in plastic. This considerable new construction of plastic greenhouses would indicate that in 1966 probably more than 10 per cent of the total greenhouse space used for the production of vegetables in Essex County was enclosed by plastic.

Greenhouses are usually built with peaked roofs whose slopes are designed to shed snow easily. In the Leamington area, sizes of individual greenhouses seem to be fairly standard, the basic unit consisting of two roof peaks covering a total span of about 71 feet and extending 200 feet on either side of a central path which provides access to the rows on either side. Such a two-peak unit contains about 28,400 square feet or approximately one-half acre of usable planting space after allowing for some loss of space at the perimeter, roof-support posts, the central path and near some of the heating pipes.

In the more-or-less standard, two-peak greenhouse, where the roof is supported by posts, rows of posts occur at approximately 17-foot intervals and such a greenhouse will contain three rows of posts within the 71-foot span. If the roof is to cover a longer span without internal support, for example by using roof trusses, the cost of construction is higher. Many greenhouses are completely free of internal supporting posts. Fewer plants can be planted in a greenhouse where supporting posts are used, partly because of the space taken by the concrete footings of the posts and partly because access to plants near the posts is awkward.

Greenhouses are heated by steam produced in a boiler located in an adjoining room or building. Around Leamington, most boilers are heated by oil, though some use natural gas; in southern Alberta gas is almost universally used. The steam is distributed throughout the greenhouse by exposed galvanized iron pipes of about $1\frac{1}{2}$ inches inside diameter, running near ground level around the perimeter and at appropriate intervals across the width of the building. Thermostatic controls are used to regulate the temperature in the greenhouse and a warning system is usually installed in the operator's nearby home which sounds an alarm when the heating system is not functioning properly.

A small office is often attached to the boiler room which is usually at the northern end of the greenhouse. The office provides space for a filing cabinet, a desk and two or three chairs. This is all that is required to store records and keep the accounts related to the greenhouse operation.

Most of the materials and equipment used in a greenhouse operation can be stored in the boiler room. However, in larger operations, additional storage space may be required for containers at harvest time and such space may be provided in an adjacent shed.

Very little mechanical equipment is used in a greenhouse. The boiler and mixing pump have already been mentioned, as have the relatively simple devices used for pollinating tomatoes and applying pesticides. In some greenhouses, a small, relatively inexpensive, gas-burning device is used to increase the carbon dioxide level and thus stimulate more rapid plant growth. Cultivation is usually by a rototiller or a similar small piece of equipment. In larger operations, a tractor may be used to prepare the soil for sterilization, to haul manure and other mulching materials and to draw one or more small, flat trailers loaded with empty or filled containers. As the plants mature and bush out, the clear space between them is greatly reduced, thus making the use of most mechanized equipment virtually impossible. Moreover, weeds are an insignificant problem in a greenhouse and cultivating for other reasons is not usually required during the growing period.

A small truck to transport vegetables to a packing plant or buyer is a part of almost every greenhouse operation. The truck is also used to haul fertilizers, pesticides and other supplies and, of course, may have uses for other operations on the farm.

Costs

There was considerable discussion at the public hearing regarding the profitability, or lack of profitability, of greenhouse vegetable production. The producers claimed that their costs had increased while their returns had decreased or remained at previous levels and that they were currently operating at a loss. The producers supported their claims with data from a study published by the Ontario Department of Agriculture. These data were not suited to the Board's requirements in several respects and were questioned by some who opposed the proposals of the producers, particularly because of the small size of the sample and the consequent difficulties of obtaining useful averages.

As a result the Board accumulated data regarding costs of greenhouse vegetable production from statements and submissions at the public hearing, published material, interviews with producers and others in various parts of Canada and correspondence with authoritative persons. There was a surprising consistency among the various sources regarding most items of cost.

Investment and Fixed Costs

The following cost data are the consensus of various studies and estimates available to the Board. The data relate to a glass enclosed greenhouse with clear spans, using superior materials and also to a greenhouse covered with plastic (such as polyethylene). The type of glass greenhouse to which the data relate would have an expected life of 40 to 50 years but is completely depreciated in 30 years in the calculation of costs. Currently, such a greenhouse, covering one acre, can be constructed at a cost of \$90,000 including boiler, boiler room, standby generator, ratio-pump-injector and related controls and installations.

The type of plastic greenhouse used in the calculations would be equipped with an appropriate fan (or fans), and would be covered with a double layer of polyethylene. This greenhouse would have a life expectancy of 15 or more years, but is fully depreciated in ten, in the calculations. The plastic covering is assumed to be replaced annually. The cost of one acre of such a plastic-covered greenhouse is taken to be \$30,000 in the calculations which follow.

Each of the above greenhouse operations is assumed to involve investment in the following mechanical and other equipment:

<u>Item</u>	<u>Estimated Cost</u>
Truck	\$2,800
Rototiller	1,000
Cultivator	150
Trailer	100
Sprayer	300
Duster	50
Buzzer-pollinator	25
House alarm	50
Miscellaneous small tools	<u>400</u>
Total	\$4,875

For the purposes of the calculations which follow, the above have been assumed to have an average life expectancy of less than seven years and are depreciated, as a group, at the rate of 15 per cent, annually.

Thus, the total replacement value of a greenhouse operation, exclusive of land, would be \$95,000 for a glass greenhouse and \$35,000 for a plastic greenhouse.

The value of land on which greenhouses are built varies greatly. In the Leamington area serviced land was said to be valued at approximately \$1,000 to \$1,500 an acre; the Ontario cost studies show the current average cost of land as about \$1,200 an acre. In other parts of Canada, the cost is as low as \$200 an acre while some of the older greenhouses, for example, in British Columbia, have been overrun by urban developments and are on land which currently is valued at several thousand dollars per acre.

Where the cost of land is included in the calculations it is assumed that two acres of land are required for a one acre greenhouse and that the land is valued at \$1,200 an acre. One acre of land additional to that on which the greenhouse is located seems sufficient to provide for clear space around the greenhouse and for access to it. Thus, the total investment, inclusive of land, would be \$97,400 for the glass greenhouse and \$37,400 for the plastic greenhouse.

For purposes of this cost study the above values are used. However, the actual investment, particularly for glass greenhouses, is often far below this amount depending largely on the date of acquisition of the greenhouse.

In some studies, greenhouses are depreciated at annual rates of 5 per cent for glass and 10 per cent for plastic. These rates tend to distort the true relationship between the two types and suggest that the cost of depreciation is much less for a plastic greenhouse than for one of glass. As noted above, the glass greenhouse is assigned a useful life of 30 years and the plastic greenhouse a life of 10 years, to give a truer representation of their relative performance.

Fixed costs are taken to include local taxes, insurance, maintenance and depreciation. The costs as calculated would be most representative of greenhouse operations in the Leamington area, but with only relatively minor modifications would apply to other areas as well.

Table 2

Estimated Replacement Cost and Annual Fixed Costs For a Clear Span Glass Greenhouse and a Double-Layer Plastic Greenhouse

	<u>Glass</u>	<u>Plastic</u>
	<u>\$ per acre</u>	
Total investment	97,400	37,400
Taxes	756	380
Insurance	720	150
Maintenance	600	2,000
Depreciation - greenhouse	3,000	3,000
equipment	<u>750</u>	<u>750</u>
Total fixed costs	5,826	6,280

The insurance on the glass greenhouse includes coverage for fire, hail, wind, boiler explosion, business interruption and public liability. The insurance coverage for the plastic greenhouse applies only to the structure; no insurance rating for additional coverage was readily available to the Board. Maintenance for the plastic greenhouse takes into account the cost of replacing a double layer of plastic every year.

Operating Costs

The operating costs include the various items shown in table 3. Higher costs of electricity in the plastic greenhouse allow for the additional costs of operating fans in such greenhouses. However, because of the effective insulation afforded by a double layer of plastic, heating costs in a plastic greenhouse are approximately two-thirds those in a glass greenhouse.

For the purposes of the calculations it is assumed that the products are harvested and delivered to a central packing plant for grading and packing. This is the practice around Leamington and, generally, around Medicine Hat; in British Columbia and Nova Scotia the operators mainly grade and pack their own production. Where grading and packing is done at the greenhouse, material (mainly containers) and labor costs are higher, as are the returns per unit to the operator.

From the available evidence, it appears that a one acre greenhouse (whether of glass or plastic) can be readily operated by two full-time workers with part-time assistance during the peak of the spring crop harvest. In the following, it is assumed that one of the full-time workers is the operator himself. It is also assumed that for a period of two months, roughly May 10 to July 10, two additional workers are employed half-days to assist in the harvest. No part-time help is required to harvest the fall crop because yields are about half those of the spring. The labor of the full-time worker is valued at \$1.50 an hour and of the part-time help at \$1.35 an hour.

The full-time employee is assumed to work 2,360 hours each year, at eight hours a working day. This allows him Sundays, two weeks of vacation and six working days for illness, annually. The part-time employees are assumed to work four hours a day, six days a week for a total of 416 hours.

It is important to note that the operating costs here listed exclude the value of the operator's contribution of labor. For the purposes of this study it is assumed that the difference between the returns to the grower from the produce sold and all costs is the amount that the operator receives for the labor and management which he contributes to the enterprise together with the return on his investment. If returns to management and to labor were to be separated, for accounting purposes, the operator's labor could be valued at \$3,540, the same as for the other full-time worker. This would, of course, increase the operating costs by this amount but would not alter the total income which the operator received.

Table 3 shows the operating costs for a one acre operation under glass and plastic. The table also shows the costs attributable to the spring crop alone, taking into account the higher costs incurred for the spring crop for heating and for handling the much larger

production achieved in the spring because of greater yields. As is noted later, economies of scale from operating a larger area are not substantial, though, of course, the returns to management would be cumulative for the increased acreage.

Of the operating costs listed below some are incurred wholly before harvest (manure and mulch); some are incurred evenly throughout the crop season (full-time labor, utilities) and some largely before or after harvest begins. Until harvesting begins and the operator receives payment for his produce, it is customary for him to finance the various costs which he incurs, usually by borrowing from a bank. The bank loans would be required to cover the period from approximately January to March, inclusive and from July to September, inclusive. It is estimated that in each of these periods the operator would require a credit of approximately \$7,500 to finance his operations and that the rate of interest on these borrowings would average about 7.5 per cent. The cost of this financing would be roughly the same for the spring and fall vegetable crops and would amount to approximately \$140 in each crop season, or \$280 annually.

Table 3

Costs of Operating One Acre Glass and Plastic Greenhouses,
Two Crops Per Year and Spring Crop Only

Item	2 crops		Spring Crop		
	glass	plastic	% of	glass	plastic
	\$	\$	total	\$	\$
Seed and plants	250	250	50	125	125
Fertilizer	500	500	50	250	250
Sprays & dusts	250	250	50	125	125
Manure & mulch	400	425	50	200	213
Electricity	400	500	67	268	335
Water	250	250	50	125	125
Telephone	100	100	67	67	67
Twine & containers	200	200	67	134	134
Heating	6,500	4,355	67	4,355	2,918
Operation of Mech. equip.	275	275	67	184	184
Labor - full time ^(a)	3,540	3,540	50	1,770	1,770
part time	562	562	100	562	562
Interest, seasonal loan	280	280	50	140	140
Other	500	500	67	335	335
Total	14,007	11,987		8,640	7,283

(a) Excludes labor contribution of operator

The two principal operating cost items are labor and heating. In a glass greenhouse, these two items together amount to \$10,602 for a two-crop vegetable operation, around three-quarters of the total estimated operating costs. Labor costs, alone, account for almost 30 per cent and heating for more than 46 per cent of the total. If the operator's labor contribution were included in the calculations, labor

costs would total \$7,642 and total operating costs would increase to \$17,547. In this situation labor and heating together would be 81 per cent of the total, with heating accounting for 37 per cent and labor for 44 per cent of the total operating costs.

The lower cost of heating a double-layer-plastic greenhouse accounts for the difference of \$2,000 in operating a plastic greenhouse. This difference in operating costs is largely offset in the fixed costs by the much higher cost of maintaining a plastic greenhouse which involves the annual replacement of a double layer of plastic. Annual costs of maintenance for a glass greenhouse were estimated to be \$600 and for a plastic greenhouse, \$2,000.

Total Costs

The foregoing indicates that the total costs of raising two crops of vegetables (spring and fall tomatoes or spring cucumbers and fall tomatoes) are approximately \$20,000 under glass and \$18,500 under a double layer of plastic. A summary of fixed and operating costs per acre, under glass and plastic is given in table 4; all of the annual fixed costs have been attributed to the spring crop.

Table 4

Fixed and Operating^(a) Costs of Glass and Plastic Greenhouses for Two Crops of Vegetables

	<u>Glass</u> \$ per acre	<u>Plastic</u>
Fixed costs	5,826	6,280
Spring-operating costs ^(a)	<u>8,640</u>	<u>7,283</u>
Total costs (one crop)	14,466	13,563
Fall-operating costs ^(a)	<u>5,367</u>	<u>4,704</u>
Two crops - total costs	19,833	18,267

^(a) Excludes value of operator's labor, management and return on investment

As noted, the cost data used throughout this section are perhaps most representative of the Leamington area although the costs of many individual items would be very similar elsewhere. In general, costs of investment and fixed costs would not vary enough, regionally, to have a significant effect on total annual fixed costs. Costs of heating and labor, together, accounted for more than 75 per cent of total operating costs, when the operator's labor contribution was excluded and for more than 80 per cent when it was included. Therefore only very large regional differences in the cost of the other individual items included here could have any appreciable effect on operating costs; such an occurrence is very improbable. Regional differences in costs of labor will affect costs to a moderate degree. For example, if the hourly rates for labor were 25 per cent less than those used in the previous calculations, the costs per acre would be reduced by \$1,000, annually, in a two-crop vegetable operation.

The greatest regional differences in costs are likely to be in respect of heating. Prices of fuel are very much lower at Medicine Hat than at Leamington and although the growers around Medicine Hat must heat their greenhouses for longer periods of time and must overcome much lower outside temperatures, annual costs of heating Alberta greenhouses are approximately \$4,000 per acre per year compared with \$6,500 for the Leamington area. The very low costs of fuel in Alberta give growers in this area a considerable advantage over those in other parts of the country, in spite of the colder climate in that province.

Total costs per acre are less for plastic than for glass greenhouses because costs of heating a double-layer plastic greenhouse are two-thirds those of a glass structure of similar size. Per acre, such a plastic house costs \$2,145 less to heat per year than one of glass. The higher costs of maintenance for a plastic greenhouse partially offset this difference. If a single layer of plastic were used the costs of maintenance would be reduced by about one-half, thus saving about \$1,000 annually in this item, but the cost of heating would approach that of the glass greenhouse and would increase by about \$1,500 to \$1,800. The net result would reduce the difference in relative costs of the two types but would still leave the plastic greenhouse with lower total costs.

Returns

It is axiomatic that the returns to growers from the production of greenhouse tomatoes or cucumbers will depend on the yield per plant and the average return per unit of produce. Returns will also be affected by the density of planting.

In the following, it has been assumed that tomato and cucumber plants are so spaced in a greenhouse that each plant occupies four square feet. This results in plantings of 10,890 plants per acre of greenhouse area. In a study of Leamington greenhouse operations the average spacing of tomatoes was slightly closer, with an average density of 11,170 plants per acre; cucumber plants averaged 10,130 per acre. Interviews with growers in the principal growing areas of Canada and an examination of the available literature suggest that an average of four square feet per plant is a reasonable assumption, although individual growers may vary the spacing to some relatively minor extent sometimes because of differences in the varieties which are grown.

The yields which have been used in calculating returns per acre are based on a consensus of various authorities regarding the average saleable yields that an efficient grower should obtain. It is assumed, in this section, that a reasonably efficient operator will obtain an average production of 12 pounds per plant from his spring crop of tomatoes, 6 pounds per plant from his fall crop of tomatoes and 30 cucumbers per plant from his cucumber crop. Some growers will obtain considerably larger yields per plant, for example as much as 16 pounds per plant from spring tomatoes, 8 to 10 pounds per plant from fall tomatoes and 32 to 36 cucumbers per plant from spring cucumbers. However, such yields would be exceptional and average operators would get lower yields than those assumed for the more efficient operators. In the Ontario study of a small sample of Leamington operations, yields per plant, in 1965 and 1966, were as follows:

		<u>1965</u>	<u>1966</u>
spring tomatoes	- lb. per plant	10.2	11.3
fall tomatoes	- lb. per plant	3.9	3.5
cucumbers	- no. per plant	29.4	27.9

Source: G.A. Fisher, Greenhouse Vegetable Cost of Production Study, Mimeograph

Relatively small differences in yields per plant can have a very substantial effect on net returns per acre and an efficient operator will devote considerable effort to ensuring that he maintains satisfactory yields, or improves the existing performance of his greenhouse.

Average returns per unit of production were calculated from data published by the Essex County Associated Growers in their annual convention bulletins. These data relate to the quantity and value of sales of spring tomatoes, fall tomatoes and cucumbers (spring). It is understood that the value data published in these bulletins represent the returns to packing plants, f.o.b. shipping point, and that marketing charges would have to be deducted in order to determine the return to growers for produce delivered to the plant for grading, packing and selling.

The charges levied against growers in 1968 for the services performed by packing plants were taken to be as follows: 25 cents per 10 pound carton of tomatoes or per two-dozen carton of cucumbers for grading and packing, 9 per cent commission for selling the products, and 4 cents per 10 pounds of tomatoes or per two dozen cucumbers as the provincial Marketing Board fee. Although not entirely applicable, these charges have been deducted from the weighted average returns at plant, 1963-66 inclusive, for the various products. The returns to growers, at the receiving platform of the packing plant, were as follows:

	<u>Tomatoes</u>		<u>Cucumbers</u>
	<u>Spring</u>	<u>Fall</u>	<u>Spring</u>
	¢ per lb.		¢ per dozen
Average return to packing plants, 1963-66	23.6	18.8	118.0
Selling commission, 9%	2.1	1.7	10.6
Packing and grading charges	2.5	2.5	12.5
Marketing Board fee	<u>0.4</u>	<u>0.4</u>	<u>2.0</u>
Total charges to grower	5.0	4.6	25.1
Return to grower delivered to plant	18.6	14.2	92.9

Preliminary indications are that average returns for tomatoes in the spring of 1967 and 1968 and in the fall of 1967 were somewhat higher than the 1963-66 averages used in this example. For cucumbers, the preliminary information suggests that average return for 1967 was somewhat lower than that shown in the table, whereas in 1968, it was somewhat higher.

In summary, the calculations which follow assume average planting densities for tomatoes and cucumbers of 10,890 plants per acre of greenhouse space, or four square feet per plant. Average yields per plant are assumed to be 12 pounds of spring tomatoes, 6 pounds of fall tomatoes and 30 cucumbers. Average returns to growers for produce delivered to packing plants are taken to be 18.6 cents a pound for spring tomatoes, 14.2 cents a pound for fall tomatoes and 92.9 cents a dozen for cucumbers. Costs are based on the data presented in the preceding section of the Report.

The data in table 5 are based on the assumptions and estimates outlined in the foregoing; the table presents a summary of average returns and costs of glass and plastic greenhouse operations involving either two crops of tomatoes annually or a crop of spring cucumbers followed by a crop of fall tomatoes.

In table 5 and in other places throughout the discussion the net return to the operator is allocated between a return on his investment and the residual remaining to cover his own labor and his managerial entrepreneurial services. The labor contribution might be separately shown based, for example, on the wages paid to a full-time employee.

The rate of return on investment is based on the rate which the grower might expect to realize on a safe, alternative investment of his money. He might well expect a higher rate of return on his investment in a greenhouse; this can be assumed to be a part of what is shown here residually as return to management. It should also be noted that the rate of return is calculated on gross replacement cost.

Table 5

Estimated Costs and Returns in the Production of Vegetables
in Glass and Plastic Greenhouses

	<u>Two Crops of Tomatoes</u>		<u>Cucumbers and Fall Tomatoes</u>	
	glass	plastic	glass	plastic
	- dollars per acre -			
Return to grower delivered to plant	33,584	33,584	34,570	34,570
Total costs	<u>19,833</u>	<u>18,267</u>	<u>19,833</u>	<u>18,267</u>
Return to investment, operator's labor & management	13,751	15,317	14,737	16,303
Allocated as return on investment, 6%	<u>5,844</u>	<u>2,244</u>	<u>5,844</u>	<u>2,244</u>
Return to operator's labor and management	7,907	13,073	8,893	14,059

On the basis of the above assumptions and allocations of cost, the management returns are significantly larger, about \$5,000 more, from the operation of a plastic greenhouse than a glass greenhouse. About \$2,000 or 40 per cent of the difference arises out of the lower costs of heating a two-layer plastic greenhouse; the remaining \$3,000 difference stems from the considerably smaller investment required for a plastic greenhouse.

The effect of different planting densities and yields per plant on the returns to growers is shown in table 6. This table is adapted from one published in Circular 914 of the University of Illinois. The authors, discussing tomato yields, state:

"Yields per plant may range from 6 to 10 pounds for the fall crop and from 12 to 20 pounds for the spring crop ... Yields from a single spring crop can be as high as 100 tons per acre [about 23 pounds per plant and 8,712 plants per acre] with extended harvest periods, increased plant populations, or both. Only the best growers, however, get yields of 20 pounds or more per plant from the spring crop or of 10 pounds from the fall crop." (p. 13)

Table 6

Effect of Planting Densities and Yields on Production and Returns per Acre of Greenhouse Tomatoes, One Crop

Spacing Per Plant sq. ft.	No. of Plants Per Acre	Yield in lb. per plant				
		4	6	10	12	16
		-	production per acre in '000 lb.			
5	8,712	34.8	52.3	87.1	104.5	139.4
4	10,890	43.6	65.3	108.9	130.7	174.2
3	14,520	58.1	87.1	145.2	174.2	232.3
return to grower in dollars per acre (a)						
5	8,712	6,482	9,723	16,204	19,445	25,927
4	10,890	8,102	12,153	20,255	24,306	32,409
3	14,520	10,803	16,204	27,007	32,409	43,212

(a) Assuming a return, delivered to plant, of 18.6¢ per pound

The calculations in table 6 assume a return to grower for spring tomatoes delivered to the plant, of 18.6 cents per pound. The effect of different prices and yields on returns is shown in the following table.

With a yield of 12 pounds per plant and 10,890 plants per acre a change of one cent per pound results in a change of \$1,307 in the return per acre; a change of one pound in the yield per plant results in a change of \$2,026 per acre in the spring and \$1,546 per acre in the fall (assuming a return to grower of 18.6 cents per pound for spring tomatoes and 14.2 cents per pound for fall tomatoes).

Table 7

Effect of Varying Yields and Returns per Pound of Tomatoes
on Total Returns to Growers, from the Production
of Greenhouse Tomatoes

Yields in Pounds Per Plant	Production Per Acre ^(a)	Return to Grower ^(b)			
		<u>14.2¢/lb.</u>	<u>16.0¢/lb.</u>	<u>18.6¢/lb.</u>	<u>20.0¢/lb.</u>
lb.	lb.	- dollars per acre -			
4	43,560	6,186	6,970	8,102	8,712
6	65,340	9,278	10,454	12,153	13,068
10	108,900	15,464	17,424	20,255	21,780
12	130,680	18,557	20,909	24,306	26,136
16	174,240	24,742	27,878	32,409	34,848

(a) Assumes 10,890 plants per acre or 4 square feet per plant

(b) For tomatoes, delivered at plant, and after deduction of packing and marketing charges

Much of the preceding discussion has been based on the over-all costs and returns in the production of two crops of vegetables annually and, as indicated in table 5, the estimated financial return for an efficient operator appears quite substantial. The following calculations indicate the relative financial importance of cucumbers and tomatoes for the spring crop alone. The estimates of plant yield, plant spacing, returns per unit and costs are identical with those used in table 5; for purposes of this discussion all fixed costs are allocated to the spring crop because these costs are incurred whether or not a fall crop is produced.

Table 8 indicates that, with the returns to grower noted above, an operator who obtained yields of 12 pounds of tomatoes or 30 cucumbers, per plant, in the spring, could expect to receive quite satisfactory results from the operation of a plastic greenhouse; the results would be less satisfactory from the operation of a glass greenhouse. The table also suggests that it is probably more profitable to grow cucumbers than tomatoes in the spring. There are, of course, possible variations in many of the factors which could alter these relationships between glass and plastic and between cucumbers and tomatoes. The discussion which follows is given in terms of tomatoes though, as noted above, cucumbers might profitably be substituted in the spring.

Table 8

Costs and Returns in the Production of Spring Crops
Only, of Cucumbers and Tomatoes, All Fixed Costs
Allocated to Spring Crop

	Cucumbers		Tomatoes	
	<u>Glass</u>	<u>Plastic</u>	<u>Glass</u>	<u>Plastic</u>
	-	dollars per acre	-	
Return to grower	25,292	25,292	24,306	24,306
Total costs	<u>14,466</u>	<u>13,563</u>	<u>14,466</u>	<u>13,563</u>
Return to investment, operator's labor & management:	10,826	11,729	9,840	10,743
Return to investment, 6%	<u>5,844</u>	<u>2,244</u>	<u>5,844</u>	<u>2,244</u>
Return to operator's labor & management	4,982	9,485	3,996	8,499

With all fixed costs attributed to the spring crop, the decision of an operator whether he should consider entering into the production of a fall crop of tomatoes would depend on the relationship between the incremental operating costs which he would incur in its production and the returns he would obtain. The various items of operating costs are shown in table 3 and, in total, in table 4. In table 9 costs and returns have been calculated for fall tomatoes, assuming yields of four and six pounds per plant; six pounds per plant would be a normal yield for an efficient operator. As in previous calculations it is assumed that there are 10,890 plants per acre and that the return to the grower for tomatoes delivered to the packing plant receiving platform is 14.2 cents per pound.

Table 9

Costs and Returns in the Production of a Crop of Fall
Tomatoes in Glass and Plastic Greenhouses, All
Fixed Costs Attributed to the Spring Crop

	Yield, 4 lb. per plant		Yield, 6 lb. per plant	
	<u>Glass</u>	<u>Plastic</u>	<u>Glass</u>	<u>Plastic</u>
	-	dollars per acre	-	
Return to grower	6,186	6,186	9,278	9,278
Total costs	<u>5,367</u>	<u>4,704</u>	<u>5,367</u>	<u>4,704</u>
Return to operator's labor & management	819	1,482	3,911	4,574

Based on an average return of 14.2 cents a pound and a yield of six pounds per plant the total return to the operator for his labor and management would be \$3,911 from a glass greenhouse and \$4,574 from one of plastic. By growing a fall crop of tomatoes, he would earn more than twice as much as the current pay for hired labour (\$1,770) for the period.

A grower, getting yields of around four pounds per plant, would have difficulty to do much better than cover his operating costs on the fall crop; in these circumstances, the advisability of growing a fall crop of tomatoes is open to serious question.

With only a spring crop, the efficient operator enjoys a much higher income than he would if he were employed full-time in similar work at the rates currently prevailing in the Leamington area. As an employee he might expect to earn approximately \$3,600 for 12 months' work; as a self-employed greenhouse operator his comparable return from the six months of work on the spring crop would be about \$4,500 per acre from a glass greenhouse and \$8,900 per acre from a plastic greenhouse. It should be kept in mind, too, that the cost estimates used throughout these illustrations are probably higher particularly as to fixed costs than those experienced by many operators.

Once having committed himself to a one-crop operation an examination of his alternatives for the remaining six months of the year are also relatively simple if he chooses between producing a fall crop of tomatoes and accepting employment in someone else's greenhouse in this period. As an employee his earnings in the six months, July to December, approximately the period during which he would be involved in producing the fall crop, are unlikely to exceed \$1,800. Having already attributed all of his fixed costs to the spring crop, the returns to his labor and management from the fall crop are \$3,911 for a glass greenhouse and \$4,574 for a plastic greenhouse.

In the circumstances outlined in the foregoing, an operator should expect to be much better off financially by operating his own greenhouse than by accepting employment in someone else's greenhouse. Moreover, he may be in a position to operate more than one acre of greenhouse space; even with one acre his income would tend to be higher than these examples illustrate if he can further exploit the advantages of efficient husbandry and marketing. This might have some particular relevance with respect to growing a fall crop, though he may have other choices even more attractive, one of which may be to grow flowers in the greenhouse in the fall.

The material presented earlier in this section, with the stated yields and average returns per acre, indicates that the costs of production, together with an allowance for the operator's own labor and a return of six per cent on investment, for the various crop combinations are approximately as follows:

	<u>Two Crops</u>		<u>Spring Crop Only</u>	
	<u>Glass</u>	<u>Plastic</u>	<u>Glass</u>	<u>Plastic</u>
	- dollars per acre		-	
Fixed plus operating costs	19,833	18,267	14,466	13,563
Return to investment, 6%	5,844	2,244	5,844	2,244
Operator's labor	<u>3,540</u>	<u>3,540</u>	<u>1,770</u>	<u>1,770</u>
Total	29,217	24,051	22,080	17,577

The total returns to a grower from various yields per plant would be as in table 10.

Table 10

Returns to Grower, For Spring and Fall Tomatoes Delivered
to Packing Plant, At Various Yields Per Plant

Yield Per Plant	Production Per Acre ^(a)	Return to Grower at:	
		<u>18.6¢ per lb.</u>	<u>14.2¢ per lb.</u>
lb.	lb.	- \$ per acre	-
4	43,560	8,102	6,186
5	54,450	10,128	7,732
6	65,340	12,153	9,278
8	87,120	16,204	12,371
9	98,010	18,230	13,917
10	108,900	20,255	15,464
11	119,790	22,281	17,010
12	130,680	24,306	18,557
14	152,460	28,358	21,649
16	174,240	32,409	24,742

(a) 10,890 plants per acre or 4 sq. ft. per plant

From the preceding, it is apparent that to cover all costs, including a six per cent return to investment and an allowance for the operator's labor the spring crop yield would have to be approximately 11 pounds per plant for a glass greenhouse and nearly nine pounds per plant for a plastic greenhouse, if only a spring crop were grown. With a yield of 11 pounds there would be virtually no return to management from a glass house but a return of \$4,700 per acre to management from a plastic house.

Stated in another way, it could be said that the unit cost of production for a grower who obtained a yield of 12 pounds per plant in the spring, would be 17 cents a pound for a glass greenhouse and 13.5 cents a pound in one of plastic. These unit costs include the allowance for the return on his investment and his labor, but not a return for management. Similarly, the unit cost of production in the fall, with a yield of six pounds per plant, would be nearly 11 cents a pound under glass and nearly 10 cents a pound under plastic. Any improvement he can achieve either in yields or net return per pound will enhance his personal income. He would, of course, receive additional income at a lower net return per pound if he has lower costs than those allowed for in these calculations.

The 17 cents a pound noted above, therefore, can be looked upon as something of a "break-even" return to the grower, under the above conditions and when he is using a glass greenhouse and growing only a spring crop. The implications of this kind of calculation become clearer when considered in conjunction with the price and transportation information of a subsequent section. If, for example, the previously cited marketing charges of 5 cents a pound are added to

this return, approximately 22 cents a pound is needed before shipment to the wholesaler. Allowing one cent a pound transportation costs, an average landed cost, in Toronto, of 23 cents a pound is indicated. It is at this level of trade that the grower's tomatoes typically meet whatever competition they face. The landed cost, of course, will be higher in more distant markets, at least by the amount of the additional transportation costs. The price will then be enhanced by the wholesale and retail mark-ups, noted later in this report, before the product becomes available to the consumer.

The above example is only one of many situations that might exist. Table 11 shows the return to the grower from various combinations of spring and fall yields, assuming a return per pound of tomatoes of 18.6 cents in the spring and 14.2 cents per pound in the fall.

Table 11

Returns to Grower, at Plant, From Various Selected Combinations
of Yields for Spring and Fall Tomatoes

Yield Per Plant			Return to Grower		
Spring	Fall	Total	Spring	Fall	Total
-	pounds	-	-	\$ per acre	-
8	4	12	16,204	6,186	22,390
9	4	13	18,230	6,186	24,416
10	5	15	20,255	7,732	27,987
11	5	16	22,281	7,732	30,013
12	6	18	24,306	9,278	33,584
14	6	20	28,358	9,278	37,636
16	8	24	32,409	12,371	44,780

The combined annual saleable yield from two crops which would cover the estimated costs and payments to the grower of \$29,217 for a glass greenhouse is between 15 and 16 pounds; to cover the estimate of \$24,051 for a plastic greenhouse, it is nearly 13 pounds. A combined yield, from spring and fall crops, of 15 to 16 pounds might typically involve a production of about 11 pounds per plant for the spring crop and about four to five pounds for the fall crop; from the available information this is not a difficult achievement; for a grower who is prepared to grow recommended varieties and to follow good, well-established, growing practices higher yields than this should be readily attainable, as the Ontario study, previously cited, notes.

However, as the Ontario study also notes, the average combined production per plant for the spring and fall crops of 1965 and 1966, for a small sample of Leamington greenhouses, averaged 14.1 pounds and 14.8 pounds, respectively. Such yields would leave very little compensation for the operator after he had paid for the costs of operating the greenhouse and made provision for depreciation and other fixed costs. The importance of even fairly small increases in average yields is therefore evident.

In a study published by the University of Illinois much higher yields were given by some tomato varieties for the spring crop alone than the combined spring and fall yields reported in the Ontario study; combined yields in several instances exceeded 25 pounds per plant. These results were obtained under test conditions and therefore might be somewhat higher than could be expected in a commercial greenhouse; even so, the differences in yields, and the variability of yields for different varieties in the test cases are striking. The Michigan-Ohio hybrid is a popular variety in Canada. It is noteworthy that the lowest yield reported for this variety in the spring was 13.8 pounds, and in the fall, 8.3 pounds per plant. These yields were achieved at somewhat less density of planting than has been used in the above examples of Canadian crops; even so, the lowest yield gives a tonnage per acre well in excess of that which results in the Canadian example using 12 pounds per plant and 10,890 plants per acre.

Table 12

Yields of Selected Tomato Varieties in Greenhouse
Production Tests^(a)

<u>Variety</u>	<u>Marketable Yield</u>			<u>Average Yield^(b)</u>	
	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>lb. per plant</u>	<u>tons per acre</u>
	- lb. per plant		-		
<u>Spring Crop</u>					
P-115	-	18.8	20.7	19.8	95.8
Mich.-Ohio Hybrid	13.8	16.9	21.5	17.4	84.2
Tuckcross - O	16.1	16.0	-	16.1	77.9
Ohio WR-7	10.4	12.8	20.2	14.5	70.2
Spartan Pink-10	12.5	-	-	12.5	60.5
<u>Fall Crop</u>					
P-115	6.7	6.7	8.8	7.4	35.8
Mich.-Ohio Hybrid	8.3	10.7	10.5	9.8	47.4
Tuckcross - O	8.8	9.9	-	9.4	45.5
Ohio WR-7	8.0	10.3	9.9	9.4	45.5
Spartan Pink-10	5.8	8.5	-	7.2	34.9

(a) Data from tomato variety tests in plastic greenhouses, Simpson, Illinois

(b) Plants grown at spacing of 4.5 square feet or approximately 9,680 plants per acre

Source: Adapted from University of Illinois, Circular 914

The foregoing suggests the usefulness of cost studies in different regions of Canada to separate costs and returns for the two crops, in order to determine whether the return to an operator from fall greenhouse tomatoes justifies their production, having regard to the much lower yields obtained in the fall and the lower returns per unit of production, relative to the spring crop. It suggests also the importance of careful selection of variety of tomato and of careful attention to good growing practices, in order to increase the yield per acre.

Economies of Scale

Very few operations performed in the production of greenhouse cucumbers and tomatoes give rise to opportunities for mechanization, regardless of the size of a commercial operation. The available information also indicates that the savings in costs of construction, for example, of a four-acre greenhouse relative to a one-acre greenhouse, are not likely to be significant, particularly when spread over the useful life of the greenhouse. Most of the operations in a greenhouse must be done by hand, for example, seeding, transplanting, removal of suckers, attaching and winding the plants on the suspended twine, harvesting and so on. As a result, greenhouse vegetable production is labor-intensive and gives few opportunities for significant economies of scale.

Dr. W.G. Phillips in a study of Leamington greenhouse vegetable production, in 1961, summed up the situation as follows:

"Such economies [of scale] do not appear to be important in greenhouse vegetable production. It is true that the initial cost of the greenhouse rises in smaller proportion than its size, so that a larger house means savings in depreciation costs per unit of output. It is also true that, up to some optimum point, the unit cost of management may decrease with larger size. These, however, are the only significant sources of savings associated with the large scale greenhouse production.

"On the other hand, a number of factors weigh against economies of large scale. Production techniques being relatively fixed, a large greenhouse, though it costs proportionately less than a small one, does not produce proportionately more. Large scale does not entail any significant saving in either of the major costs -- labour and fuel, provided in the latter case that the boiler is the right size for the house. In fact, there is some tendency for economies of scale in management to be outweighed by diseconomies in labour. The small operator whose labour consists of his family and 3 or 4 hired people has better control of his labour than does the large operator, especially when he has to combine the same labour force in both field and greenhouse operations.

"Finally, the intensive nature of greenhouse operations does not permit any significant use of farm machinery of the usual variety. In the greenhouse, labour takes the place of such equipment.

"For these reasons, a technically well-organized small greenhouse can survive on even terms with its larger competitors. This probably explains why the main import competition in Canada comes from the southern field-grown crops rather than from the greenhouses in Ohio. The considerably larger scale on which the latter operate (combined, as it is, with lower fuel prices) has never been sufficient to enable them to overcome the advantage of the Canadian industry in lower labour rates, an interesting contrast with many other sectors of Canadian industry." (W.G. Phillips, *The Greenhouse Vegetable Industry*, p. 15, 16, 17)

The authors of the bulletin, "The Feasibility of Growing Greenhouse Tomatoes in Southern Illinois", state that:

"Because of the high labor input and lack of opportunity to mechanize many operations, the cost of production per unit does not vary appreciably with the size of operation. It does, however, vary widely with efficiency and yield. The manager-operator of a small greenhouse who works closely with one or two skilled employees often has better control than the manager of a larger greenhouse who must spend his time supervising several less skilled employees. Unit costs may go up even though the employees are paid at a lower wage scale. Therefore, technically well-organized and properly managed family units can compete with larger greenhouse units." (p. 12, 13)

A Note on Some Technological Aspects

It is evident, from the previous discussion, that it is probably cheaper to produce greenhouse vegetables in a double-layer plastic greenhouse than in a glass greenhouse, though the difference would not be very significant over a period of 15 years or more.

At the present time, a major disadvantage of a plastic greenhouse is the cost and inconvenience of annual replacement of the plastic. The most common type of plastic in use is polyethylene, a material which deteriorates on exposure to ultra-violet light and is replaced every year. More permanent types of plastic are available, which need to be replaced about every five years, for example, mylar, but their initial cost is much higher than polyethylene. The available literature suggests that considerable research is being done on the development of resistance to ultra-violet light in low-cost plastic films; when such films are available costs of production in plastic greenhouses will be reduced substantially from present levels.

Another technological problem in greenhouse vegetable production relates to the lower yields of the fall, relative to the spring crop. If the growers who participated in the Ontario cost of production studies could have increased their average fall yields from the less than four pounds per plant which they obtained to six pounds per plant, their returns would have been increased by more than \$3,000 per acre. Currently, for tomatoes, fall production per plant is approximately 40 per cent that of the spring crop. A major reason for this difference is said to be the fewer hours of sunlight during the fall crop growing season. The use of artificial light is common in the production of greenhouse flowers and potted plants; its use seems to be almost non-existent in the production of greenhouse vegetables. The cost of artificial lighting and its effect on yields of vegetables, particularly in the fall, might be a most logical area for intensive research, especially because the opportunities to reduce labor and heating costs, the two principal items, are limited and progress in the development of significantly improved varieties of plants tends to be slow. It is interesting to note that plant breeding experiments are being conducted in "greenhouses" in which artificial light is relied upon entirely.

The IndustryLocation of the Industry

In Canada, the greenhouse vegetable industry is located mainly in the Leamington area of southwestern Ontario with other significant concentrations around the cities of Victoria and Vancouver, near Medicine Hat, Alberta and in the Annapolis Valley in Nova Scotia. Other, generally smaller, concentrations occur near Winnipeg, in the Niagara, Burlington and Bradford areas of Ontario and near Montreal. By far the largest and most important area of greenhouse vegetable production is within a ten-mile radius of Leamington, in Essex County, Ontario.

The concentration of production in Ontario and British Columbia is indicated in table 13, in terms of value of sales.

Table 13

Value of Sales of Greenhouse Vegetables, Canada and by
Province of Origin, 1961-66

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
	- thousand dollars -					
Ont.	3,631	4,122	5,149	6,234	6,720	7,468
B.C.	941	1,022	1,111	1,182	1,328	1,368
N.S.	105	181	181	291	277	362
Alta.	144	162	201	131	170	161
Other	<u>61</u>	<u>72</u>	<u>65</u>	<u>67</u>	<u>50</u>	<u>74</u>
Canada	4,883	5,560	6,708	7,905	8,545	9,432
	- per cent of Canada -					
Ont.	74.4	74.1	76.8	78.9	78.6	79.2
B.C.	19.3	18.4	16.6	15.0	15.5	14.5
N.S.	2.2	3.3	2.7	3.7	3.2	3.8
Alta.	2.9	2.9	3.0	1.7	2.0	1.7
Other	1.2	1.3	1.0	0.8	0.6	0.8

Source: D.B.S., Cat. No. 22-202; B.C. Dept. of Agriculture

Ontario accounts for more than three-quarters of Canadian production of greenhouse vegetables, overshadowing all other regions in Canada. British Columbia, with around 15 per cent, is the second most important producing region. The production of greenhouse vegetables in all other areas combined has an annual sales value of around one-half million dollars and accounts for less than seven per cent of the value of sales of Canadian greenhouse vegetables. The volume of production of greenhouse vegetables in provinces other than Ontario is not large enough to supply even the demand within the province and even in Ontario the production of greenhouse tomatoes is far less than the consumption of tomatoes during the spring and fall greenhouse marketing seasons.

The importance of Essex County (essentially a ten-mile radius around Leamington) as a producing area is clearly shown in table 14.

Table 14

Value of Sales of Greenhouse Cucumbers and Tomatoes From
Essex County, Ontario, Compared with Sales for All
Of Ontario and Canada, 1961-67

	<u>Canada</u>	<u>Ontario</u>	<u>Essex</u>	<u>Essex as a % of:</u>	
	-	thousand dollars	-	<u>Canada</u>	<u>Ontario</u>
	-		-	-	per cent -
1961	4,723	3,514	2,999	63.5	85.3
1962	5,393	3,992	3,531	65.5	88.5
1963	6,575	5,043	4,546	69.1	90.1
1964	7,714	6,084	5,611	72.7	92.2
1965	8,360	6,613	6,105	73.0	92.3
1966	9,271	7,354	6,809	73.4	92.6
1967(a)	9,459	7,263	6,612	69.9	91.0

(a) Estimated

Source: D.B.S., Cat. No. 22-202; Essex County Associated Growers

As table 15 indicates, only from Ontario and British Columbia are greenhouse vegetables regularly shipped outside the province. Ontario does this on a fairly large scale and the market for its produce extends from the Atlantic to the Pacific coasts, although it is heavily concentrated in Ontario and Quebec. British Columbia ships to other areas only on a very small scale. It is significant that Ontario supplies the Prairie Provinces with fairly substantial quantities of greenhouse vegetables (principally cucumbers) whereas British Columbia rarely ships more than a few carloads to that region in any year. Ontario and, to a much lesser extent, British Columbia, export greenhouse vegetables to neighbouring areas in the U.S.A.

Table 15

Shipments of Domestic Greenhouse Cucumbers and
Tomatoes Outside the Province Where Grown,
Spring and Fall Seasons, 1963-67

<u>Origin</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
-	carloads(a) shipped outside province of origin				-
<u>Cucumbers - February to June</u>					
B.C.	1	3	3	1	1
Ont.	178	223	199	144	193
Que.	-	1	-	1	1
<u>Spring Tomatoes - April to June</u>					
B.C.	4	3	-	1	1
Ont.	38	129	140	65	101
<u>Fall Tomatoes - Oct. to Dec.</u>					
Ont.	136	92	55	95	108

(a) Includes rail and truck carloads

Source: Canada Dept. of Agriculture, Annual Unload Report

Except for the production of the Leamington area, greenhouse vegetables are sold almost entirely in the immediate vicinity of their growth. The production of the Leamington area is sold mainly in Ontario and Quebec but significant shipments are also made to the Atlantic and Prairie regions and to the U.S.A. Even so, Ontario is a large net importer of fresh tomatoes during the spring and fall marketing seasons for greenhouse tomatoes.

Relative Importance of Vegetables Grown

Cucumbers and tomatoes, together, account for about 98 per cent of the value of sales of all greenhouse vegetables produced in Canada, and had a sales value in 1966 of \$9.3 million. Lettuce is the only other vegetable grown in greenhouses in any significant volume, but the sales value of greenhouse lettuce in 1966 was only about \$65,000, less than one per cent of total sales. Other vegetables such as radishes, parsley and Chinese greens are also grown by a few producers.

Table 16

Value of Sales of Greenhouse Vegetables, by Kind,
1963-67

	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
		-	thousand dollars	-	
Cucumbers	3,081	3,554	3,951	4,329	4,188
Tomatoes, total	3,494	4,160	4,408	4,942	5,271
spring	..	..	3,005	3,516	3,906
fall	..	..	1,403	1,426	1,365
Lettuce	96	80	86	65	..
Other	<u>37</u>	<u>111</u>	<u>100</u>	<u>96</u>	<u>..</u>
All Vegetables	6,708	7,905	8,545	9,432	..

Source: D.B.S., Cat. No. 22-202; B.C. Dept. of Agriculture

Although the annual value of sales of tomatoes exceeds that of cucumbers, cucumbers, in the spring, have a larger sales value. They are not ordinarily grown in greenhouses as a fall crop and many producers who grow cucumbers in the spring grow tomatoes in the fall. Fall tomatoes, in turn, are grown to an appreciable extent only in Ontario.

Table 17

Value of Sales of Greenhouse Vegetables, by Principal
Kind and Region, 1966

	<u>Cucumbers</u>	<u>Spring Tomatoes</u>	<u>Fall Tomatoes</u>	<u>Lettuce</u>	<u>Other Veg.</u>	<u>Total</u>
		-	thousand dollars	-		
Nova Scotia	108	184	71	*	*	362
Quebec	12	7	8	6	5	38
Ontario	3,594	2,539	1,221	54	59	7,468
Alberta	91	41	27	*	2	161
B.C.	518	743	83	*	23	1,368
Other areas	<u>6</u>	<u>3</u>	<u>15</u>	<u>5</u>	<u>6</u>	<u>34</u>
Canada	4,329	3,516	1,426	65	96	9,432

* Included in "Other areas"

Source: D.B.S., Cat. No. 22-202; B.C. Dept. of Agriculture

Growth of the Industry

The greenhouse vegetable industry has had a very rapid growth in the past ten years with production and value of production being three times as large in 1966 as in 1956. Production of cucumbers more than trebled during this period while that of tomatoes increased almost four-fold. Production of lettuce and other vegetables appear to have increased only slightly during the decade.

Unfortunately there are few data available regarding the changes in the total number of producers of greenhouse vegetables and in the area devoted to vegetable production. However, the available data indicate that there was little change in the number of growers producing greenhouse vegetables during the decade and that, even with some allowance for an increase in yields, there must have been a considerable increase in the greenhouse area devoted to vegetable production as well as in the size of the average operation.

Some indication of this can be derived with respect to Essex County. Although flowers and bedding plants are produced in Essex County, the greenhouse area is used mainly for the production of vegetables. The total greenhouse space reported for Essex County more than doubled between 1959 and 1966, increasing from 145 acres in 1959 to 296 acres in 1966.

By inference, given the relative stability of the numbers of growers in Canada and the increase in acreage, the average size of vegetable greenhouse operation has increased substantially during the past decade, as has the amount of produce sold per establishment.

Table 18

Greenhouse Vegetables: Operators Reporting, Quantities Sold and Value of Sales, 1956 and 1966

<u>Operators Reporting</u> ^(a)	<u>1956</u>	<u>1966</u>	<u>Change 1956-66</u>	
	nos.		actual	per cent
Cucumbers	126	157	31	24.6
Tomatoes	292	251 ^(b)	-41	-14.0
Lettuce	74	43	-31	-41.9
Other Veg.	67	33	-34	-50.7
<u>Quantity Sold</u>	'000 lb.			
Cucumbers	9,926	31,182	21,256	214.1
Tomatoes	5,916	22,018	16,102	272.2
All Other Veg.	997	1,031	34	3.4
Total Veg.	16,839	54,230	37,391	222.1
<u>Value of Sales</u>	'\$'000			
Cucumbers	1,401	4,329	2,927	208.9
Tomatoes	1,261	4,942	3,681	291.9
All Other Veg.	153	161	8	5.2
Total Veg.	2,815	9,432	6,617	235.1

(a) The same grower may be producing more than one kind of vegetable at any given time

(b) Spring crop only

Source: D.B.S., Cat. No. 22-202; B.C. Dept. of Agriculture

The growth of the greenhouse vegetable industry has been mainly in Ontario, although fairly significant increases have also occurred in British Columbia and Nova Scotia. The industry has declined in Quebec, where it was never particularly significant, and has increased only relatively little in other regions. Ontario accounted for 87 per cent of the increase in value of sales of all greenhouse vegetables, 1956-66, British Columbia for nine per cent and Nova Scotia for about four per cent.

Table 19

Value of Sales of All Greenhouse Vegetables,
by Province, 1956 and 1966

	<u>1956</u>	<u>1966</u>	<u>Change 1956-66</u>	
	\$'000		\$'000	per cent
Nova Scotia	107	362	255	238
Quebec	85	38	-47	-55
Ontario	1,722	7,468	5,746	334
Alberta	127	161	34	27
British Columbia	768	1,368	600	78
Others	<u>6</u>	<u>36</u>	<u>30</u>	<u>500</u>
Canada	2,815	9,432	6,618	235

Source: D.B.S., Cat. No. 22-202; B.C. Dept. of Agriculture

The growth of the industry has been more rapid in the last half of the decade than in the first and the greatest relative expansion in recent years has occurred in Nova Scotia. In Nova Scotia, the expansion has been mainly in the production of tomatoes although cucumber production has also been increased significantly. As is apparent from table 20, there was little change in Nova Scotia production between 1956 and 1961. However, beginning in 1962 production and sales of greenhouse tomatoes increased very rapidly with fairly substantial changes in the sales value of cucumbers becoming apparent only in 1964.

Table 20

Nova Scotia; Value of Sales of Greenhouse Cucumbers
and Tomatoes, Selected Years, 1956-66

	<u>1956</u>	<u>1961</u>	<u>1962</u>	<u>1966</u>
		\$'000		
Cucumbers	42	49	64	108
Tomatoes	<u>64</u>	<u>56</u>	<u>116</u>	<u>254</u>
Total	106	105	181	362

Source: D.B.S., Cat. No. 22-202

In British Columbia the sales value of greenhouse cucumbers doubled between 1956 and 1961 and increased again by almost two-thirds from 1961 to 1966. On the other hand the sales value of tomatoes hardly changed between 1956 and 1961 and though their value of sales rose by approximately the same amount as cucumbers, 1961-66, the percentage change in this latter period was much less. However, in spite of the greater relative increase in value of sales of cucumbers, tomatoes still account for more than 60 per cent of their combined sales.

Table 21

British Columbia; Value of Sales of Greenhouse Cucumbers
and Tomatoes, Selected Years, 1956-67

	<u>1956</u>	<u>1961</u>	<u>1966</u> -	<u>1967</u> \$'000 -	<u>Change</u>	
					<u>1956-61</u>	<u>1961-66</u>
Cucumbers	152	315	518	474	163	203
Tomatoes	<u>587</u>	<u>604</u>	<u>826</u>	<u>1,141</u>	<u>17</u>	<u>222</u>
Total	739	920	1,344	1,615	181	424

Source: B.C. Dept. of Agriculture

Although the growth of the greenhouse vegetable industry outside of Ontario was fairly substantial, the principal growth occurred around Leamington, in Essex County, Ontario. Data respecting sales of Essex County greenhouse cucumbers and tomatoes are available only since 1958; a comparison of Essex County and total Canadian sales of these two vegetables is given in table 22.

Table 22

Value of Sales of Cucumbers and Tomatoes, Essex
County and Total Canada, 1958-67

	<u>Cucumbers</u>			<u>Tomatoes</u>		
	<u>Essex</u> \$'000	<u>Canada</u>	Essex as % of Can. per cent	<u>Essex</u> \$'000	<u>Canada</u>	Essex as % of Can. per cent
1958	1,127	1,498	75.2	377	1,694	22.3
1959	1,362	1,755	77.6	808	1,793	45.1
1960	1,704	2,147	79.4	926	2,084	44.4
1961	1,651	2,216	74.5	1,348	2,508	53.7
1962	1,826	2,407	75.9	1,705	2,986	57.1
1963	2,418	3,081	78.5	2,128	3,494	60.9
1964	2,873	3,554	80.8	2,738	4,160	65.8
1965	3,222	3,951	81.5	2,883	4,408	65.4
1966	3,507	4,329	81.0	3,302	4,942	66.8
1967	3,349(a)	4,188(a)	80.0	3,263	5,271(a)	61.9
<u>Change</u>						
1958-61	524	718	73.0	971	814	119.3
1961-66	1,856	2,113	87.8	1,954	2,434	80.3
1958-66	2,380	2,831	84.1	2,925	3,248	90.1

(a) Estimated

Source: D.B.S., Cat. No. 22-202; Essex County Associated Growers

In 1958 Essex County sales of tomatoes were unusually small and in 1967 its sales of cucumbers were reported to be very small; therefore, the comparisons in the following will apply to the years 1959-67 for tomatoes and 1958-66 for cucumbers.

During the nine years, 1958-66, Essex County sales of cucumbers more than trebled and the county currently supplies more than 80 per cent of the domestic greenhouse cucumbers represented by these sales data. In the period, 1959-67, the value of Essex County sales of greenhouse tomatoes increased four-fold and in 1967 constituted about two-thirds of the sales of all Canadian greenhouse tomatoes.

The expansion of production and value of Essex County greenhouse vegetables has been continuous throughout the periods cited although year to year changes have varied. Moreover, the county's share of the total production and sales by the Canadian industry has become larger over time in spite of the expansion of the greenhouse vegetable industry in other parts of the country. In 1959 the county accounted for 78 per cent of the value of sales of Canadian greenhouse cucumbers and 45 per cent of the value of sales of greenhouse tomatoes; in 1966, its value of sales of cucumbers was 81 per cent of the Canadian total and of tomatoes 67 per cent of the total.

During the period, 1959-66, sales of Essex County greenhouse tomatoes have increased somewhat more than sales of cucumbers, mainly because of increases in production and sales of spring tomatoes. In 1967 production of spring tomatoes was nearly six times as large as in 1959 and the value of sales more than five times as large. Production and sales of fall tomatoes were about $2\frac{1}{2}$ times as large in 1967 as in 1959 and production and sales of greenhouse cucumbers in 1967 were more than $2\frac{1}{2}$ times as large as in 1959.

Table 23

Essex County, Production and Value of Sales of Greenhouse Cucumbers and Tomatoes, Selected Years, 1959-67

	Production			Value of Sales		
	Spring	Fall	Cucumbers	Spring	Fall	Cucumbers
	<u>Tomatoes</u>	<u>Tomatoes</u>		<u>Tomatoes</u>	<u>Tomatoes</u>	
	-	'000 lb.	-	-	\$'000	-
1959	1,334	2,238	10,396	400	407	1,362
1961	3,350	3,291	15,875	858	490	1,651
1964	6,356	6,060	24,346	1,544	1,194	2,873
1966	9,074	6,250	26,978	2,114	1,188	3,507
1967	7,506	5,750	28,408(a)	2,170	1,093	3,349(a)
<u>Change</u>						
1959-67	6,172	3,512	18,012	1,770	686	1,987

(a) Estimated

Source: Essex County Associated Growers

From the foregoing, it is apparent that the Canadian greenhouse vegetable industry has expanded rapidly during the past decade both in the volume and value of production. The greatest expansion has occurred in the Leamington area, but significant increases also have occurred in British Columbia and Nova Scotia. Although Alberta production has also risen during the period, the change has been small relative to the changes in the more important producing areas.

The Canadian Market

A Note on the Unload Statistics

This section of the Report is based to some extent on the statistics published by the Canada Department of Agriculture relating to "unloads" of fresh fruit and vegetables on 12 Canadian markets. These markets are Halifax, Saint John (N.B.), Quebec City, Montreal, Ottawa, Toronto, Winnipeg, Regina, Saskatoon, Edmonton, Calgary and Vancouver. These centres account for a very large part, but by no means all, of the unloads. They give useful indications of the movement of the produce to the principal markets in various regions but do not provide a complete accounting of supply and disappearance. For these cities the statistics record the number of truckloads and railway carloads of fresh fruit and vegetables unloaded each month by country of origin. For domestic produce, the data also record the province of origin; for U.S. produce, the state of origin is given.

For tomatoes and cucumbers, as noted, these unloads account for a large proportion of the total movement. In general, this record is more accurate for larger markets than for smaller markets and it covers a larger proportion of the movement of imported than of domestic produce. The 12 markets for which unload data are collected are the principal distribution centres for the regions in which they are located; many other centres are ordinarily served by dealers in the 12 markets who acquire produce in truckload or carload lots and distribute it in lesser quantities to neighboring cities and towns.

The regions used in the analysis which follows are: the Atlantic Provinces, Quebec, Ontario, the Prairie Provinces, and British Columbia; for some of the analysis, Quebec and Ontario may be combined into a single region. Except for the Ottawa area, it is highly improbable that cucumbers and tomatoes reported as having been unloaded in one of the above regions would be re-shipped to another region; for Ottawa, some trans-shipments from Montreal occur which also distort slightly the provincial data for Ontario and Quebec.

A serious shortcoming of the unload data is that they are reported in terms of carloads (truck or rail) and the weight of the contents is variable over a substantial range. For example, the weight of tomatoes in a reported truckload may vary from less than 20,000 pounds to more than 35,000 pounds; similarly the contents of a reported rail carload may vary from about 24,000 pounds to more than 40,000 pounds. The conversion of the carload data to pounds in this Report is based on the best advice available from a large number of persons and agencies knowledgeable in this industry and in the distribution and transportation of produce. Although some error is inevitable in this conversion, it is unlikely that the difference would have any appreciable effect on the analysis.

The conversions of truckloads and rail carloads to pounds assumed the following weights of contents:

	<u>Origin of Product</u>	
	<u>Domestic</u>	<u>Imported</u>
	pounds per carload	
<u>Tomatoes</u>		
Truck	22,000	30,000
Rail	25,000	37,000
<u>Cucumbers</u>		
Truck	25,000	34,000
Rail	30,000	40,000

Periods to Which the Analysis Applies

In Canada, greenhouse cucumbers begin to be harvested around the beginning of March and are available in significant volume about the first week of April. The harvesting of greenhouse cucumbers is generally over by the end of June or the first week of July. Harvesting begins somewhat later in British Columbia and Nova Scotia and continues somewhat longer, but the four-month period, March to June, would cover the great bulk of the sales of Canadian greenhouse cucumbers; the analysis which follows applies to this period, for cucumbers. Because very few, if any, cucumbers are produced as a fall greenhouse crop, fall cucumbers are not dealt with in this Report.

The spring tomato harvest begins about mid-April. Like cucumbers, the harvest achieves significant volume in approximately four weeks and continues into the first part of July; except in occasional years, it is substantially over by mid-July. In regions other than Ontario, greenhouse tomatoes may be harvested into August and even later, but in terms of the total Canadian production of spring tomatoes the quantities are not significant. Canadian field tomatoes begin to be harvested in the early part of July and the available data on the volume of movement do not distinguish between greenhouse and field tomatoes. As a result the analysis which follows is restricted to the three-month period, April to June, for the spring crop of tomatoes. Most of the spring crop is sold in this period and to have extended the period for analysis into July would have resulted in considerable confusion between greenhouse and domestic field-grown tomatoes in some years.

The principal months in which fall greenhouse tomatoes are harvested are October and November, with some sales continuing into December and even January. In some years, when frosts are late in coming, harvesting of field tomatoes continues into October. In these years there is no way of differentiating between movements of field and greenhouse tomatoes. Although October unloads of domestic tomatoes are treated in the tables as if they related to domestic greenhouse production, in fact, the statistics include some quantities of field-grown tomatoes which, in some years, may be fairly substantial.

In summation, the analysis which follows relates to the months of April, May and June as the period during which spring greenhouse tomatoes are marketed and the months of October, November and December as the period during which fall greenhouse tomatoes are marketed. The marketing season for greenhouse cucumbers is taken to be the four-month period, March to June, inclusive. For spring tomatoes and cucumbers the use of these periods will tend to understate the seasonal sales of greenhouse products to the extent that their harvest and sale continue beyond June. This is not a matter of consequence for this analysis. For fall greenhouse tomatoes the sales will be overstated to a degree because some field tomatoes are included in the October domestic unloads. However, this, too, will not affect the analysis significantly.

Canadian Consumption

During the spring greenhouse season, Canadians currently consume about 37 million pounds of cucumbers and around 80 million pounds of tomatoes. About 85 per cent of the cucumbers consumed during this period are grown in Canadian greenhouses; the remainder are imported field-grown. In sharp contrast, more than 80 per cent of the tomatoes consumed in the spring are imported.

Canadian consumption of cucumbers has risen steadily from 18.4 million pounds in 1957 to 37.5 million pounds in 1967, an increase of more than 100 per cent. Eleven of the 19 million pounds of increase, 1957 to 1967, occurred between 1962 and 1966.

Domestic consumption of greenhouse and field tomatoes in the spring and fall seasons, combined, also rose very substantially, from 88.8 million pounds in 1957 to 128.8 million pounds in 1967, an increase of 40 million pounds, or 45 per cent. A large part of the increase was of greenhouse tomatoes whose consumption, 1957-67, rose by 15.2 million pounds compared with 24.8 million pounds for field-grown tomatoes. In percentage terms, the increase in use of greenhouse tomatoes was about 200 per cent, compared with only 31 per cent for field tomatoes. As a result, greenhouse tomatoes, which accounted for only 8.7 per cent of Canadian consumption in 1957, were 17.8 per cent of the total in 1967. However, in spite of these very significant gains Canadians continue to consume about four pounds of field to one pound of greenhouse tomatoes and the figures indicate that consumption of greenhouse tomatoes has been increasing more slowly since 1962 than in earlier years.

Consumption of field tomatoes rose by seven million pounds from 1957 to 1962 but increased by nearly 17.8 million pounds between 1962 and 1967. In contrast domestic use of greenhouse tomatoes increased by 10.3 million pounds between 1957 and 1962 but rose by only 4.9 million pounds between 1962 and 1967. Thus, there was a substantial difference in the impact on the market as the decade progressed, as first the demand for greenhouse tomatoes grew more rapidly and then the demand for field tomatoes. These relationships are discussed more fully in later parts of the report; as noted below, comparisons which include 1967 involve the unusually large imports and consumption of field tomatoes in the fall of that year. When comparisons are made from 1962 to 1966, as they are below, the increasing importance of greenhouse tomatoes in the market is more apparent.

Table 24

Canadian Consumption of Cucumbers and Tomatoes,
1957-67

Cucumbers March-June	Tomatoes					
	April-June		Oct.-Dec.		Both Periods	
	Field	Greenh.	Field	Greenh.	Field	Greenh.
	-		million pounds		-	
1957	18.4	..	..	..	81.1	7.7
1958	19.3	..	..	..	80.8	9.2
1959	19.0	..	..	..	91.3	9.7
1960	23.4	..	..	..	86.6	13.5
1961	25.6	..	..	..	87.6	17.1
1962	25.9	57.6	12.2	30.5	88.1	18.0
1963	32.9	56.3	13.6	34.4	90.8	21.2
1964	31.6	54.4	15.4	35.2	89.7	23.2
1965	35.0	56.1	15.2	33.7	89.8	22.0
1966	36.8	60.2	17.6	32.7	92.9	25.3
1967(a)	37.5	64.4	15.7	41.6	105.9	22.9

(a) Partly estimated

Source: Based on data from D.B.S., Canada Dept. of Agriculture and U.S. Dept. of Agriculture

As is evident from table 24, Canadians consume far more tomatoes in the spring than in the fall greenhouse season, the ratio being nearly two to one. This is approximately true for both field and greenhouse tomatoes. In the period 1962-66, consumption in the spring rose by eight million pounds and in the fall, by four million pounds, thus maintaining the ratio of two to one.

The above applies to field and greenhouse tomatoes taken together. Taken separately the increase in consumption of field tomatoes, 1962-66, was 2.6 million pounds in the spring and 2.2 million in the fall; for greenhouse tomatoes the increase in the spring was 5.4 million pounds and in the fall 1.7 million pounds. These changes are noteworthy in that of the total change in consumption in the period, 1962-66, of approximately 12.1 million pounds, increased consumption of greenhouse tomatoes accounted for 7.3 million pounds or 60 per cent, although they account for just over 20 per cent of total consumption. Thus, the consumption of greenhouse tomatoes has increased at a faster rate in both seasons than that of field tomatoes. However, there appears to be a slowing down in the rate of increase in consumption of greenhouse tomatoes relative to imported field tomatoes.

Regional Consumption

Ontario and Quebec provide the principal market for cucumbers and tomatoes in the spring and fall greenhouse seasons. They account for about 80 per cent of the Canadian consumption of cucumbers and two-thirds of the consumption of tomatoes (greenhouse and field). Their

share of the consumption of tomatoes, in total, is approximately in relation to their population but for greenhouse tomatoes taken separately it more closely resembles the consumption of greenhouse cucumbers and is far higher than population alone would indicate. Thus imported field tomatoes are supplying a much larger share of the consumption outside the Central Provinces, both in the spring and fall seasons. Even in the Central Provinces, Quebec relies upon imported tomatoes (both field and greenhouse) for about 90 per cent of its consumption and Ontario for about 75 per cent of its consumption. Thus the consumption of domestic greenhouse produce, particularly of tomatoes, is a very local matter; even though shipments outside the growing areas are very important to the growers in disposing of their produce, these shipments fall far short of supplying the markets even in the provinces where production of greenhouse vegetables is largest.

Table 25

Consumption of Cucumbers and Tomatoes, Spring and Fall
Greenhouse Seasons, by Kind and Region, 1966

	<u>Cucumbers</u>		<u>Spring Tomatoes</u>		<u>Fall Tomatoes</u>	
	<u>Greenhouse</u>	<u>Total</u>	<u>Greenhouse</u>	<u>Total</u>	<u>Greenhouse</u>	<u>Total</u>
			- million pounds			
Atlantic						
Provinces	0.8	1.9	0.7	4.0	0.3	2.4
Central						
Provinces	24.1	29.6	13.8	53.9	6.8	26.8
Prairie						
Provinces	2.4	2.8	0.2	11.0	0.1	6.1
British						
Columbia	<u>2.1</u>	<u>2.5</u>	<u>2.9</u>	<u>9.0</u>	<u>0.3</u>	<u>5.0</u>
Canada	29.4	36.8	17.6	77.8	7.6	40.3

Source: Derived from D.B.S. and other data

Prices of cucumbers are significantly lower in the Central Provinces than in other parts of Canada and this may be the reason for the disproportionately large share of the Canadian consumption of cucumbers which occurs in this region. In addition, prices of imported and domestic cucumbers are generally very little different so that consumers can be fairly indifferent whether to purchase the imported or domestic product; they purchase cucumbers at the going price or do without them.

For tomatoes, however, the consumer, at least in Ontario and Quebec where domestic greenhouse tomatoes are offered in substantial quantities, has a distinct choice based on price. Imported field tomatoes are usually sold at substantially lower prices than are greenhouse tomatoes and consumers can increase their consumption of tomatoes by purchasing the cheaper field imports. In the Prairie and Atlantic Regions, consumption of greenhouse tomatoes per person is relatively very low, but consumption of all tomatoes begins to approach the levels one might expect relative to income per person and taking into account the higher prices that prevail in these regions.

Table 26

Personal Disposable Income and Consumption of
Cucumbers and Tomatoes, Per Person,
by Region and Season, 1966

	<u>Atlantic Provinces</u>	<u>Central Provinces</u>	<u>Prairie Provinces</u>	<u>British Columbia</u>
	- dollars per person -			
Personal Disposable Income (a)	1,398	1,945	2,009	2,188
<u>Consumption of Greenhouse</u>	- pounds per person -			
Spring cucumbers	.40	1.89	.72	1.11
Spring tomatoes	.37	1.08	.07	1.53
Fall tomatoes	.18	.53	.04	.18
Spring & fall tomatoes	.54	1.61	.11	1.71
<u>Cons. of Field & Greenhouse</u>	- pounds per person -			
Spring cucumbers	.98	2.32	.82	1.32
Spring tomatoes	2.02	4.23	3.25	4.78
Fall tomatoes	1.20	2.10	1.81	2.69
Spring & fall tomatoes	3.22	6.33	5.06	7.47

(a) Total personal income less direct taxes

Source: Derived from D.B.S. and other data

As table 26 indicates, per capita consumption of greenhouse cucumbers and tomatoes is highest in the Central Provinces and British Columbia, the two regions where they are produced in substantial quantities. Consumption per person is lowest in the Atlantic and Prairie Provinces. As noted above, prices of these products are generally higher in the regions remote from growers and, of course, the disposable income per person in the Atlantic Provinces is lower than in the other regions shown. The effect on prices of the cost of the long haul from the main growing region in Ontario, the time taken for delivery and the probable larger amount of waste ensuing from the jarring of the produce enroute are probable factors in limiting consumption of greenhouse products in the Prairie Provinces, in spite of higher than average income per person.

Imports

There is not a single month of the year during which Canadian production of cucumbers or tomatoes is sufficient to supply domestic demand. The dependence on imports is greatest during those months when Canadian field-grown supplies are not available; also, in those months, it is greatest in those provinces in which the production of greenhouse vegetables is small. In general, Ontario and British Columbia depend least on imported supplies of cucumbers and tomatoes during those months when Canadian production consists of greenhouse-grown products.

Cucumbers

As indicated earlier, Canadian consumption of cucumbers during the spring season (March to June) is largely of the domestic greenhouse product. In the five-year period, 1963-67 imports of cucumbers, March to June, supplied, on average, 17 per cent of the total consumption. All of the imports appear to have been field-grown cucumbers originating, mainly, in the southern parts of the U.S.A.

Since the late fifties, March to June imports have ranged between 4.5 and 8.2 million pounds, but have shown no marked trend either upward or downward. In the same eleven-year period, 1957-67, Canadian consumption of cucumbers, March to June, increased from 18.4 million pounds in 1957 to 37.5 million pounds in 1967. The additional 19.1 million pounds required to satisfy the expanding domestic demand was supplied by Canadian greenhouse production. As a result, imported cucumbers, which accounted for 37 per cent of Canadian consumption in 1957, currently account for only 16 per cent of Canadian use.

Table 27

Cucumbers: Imports by Principal Country of Origin,
March to June, 1956-68

	<u>U.S.A.</u> -	<u>Mexico</u> '000 lb.	<u>Others</u> -	<u>Total</u>		<u>Imports as % of Consumption</u> per cent
				<u>Quantity</u> '000 lb.	<u>Value</u> \$'000	
1956	5,941	6	88	6,035	496	38
1957	6,822	19	35	6,875	503	37
1958	8,053	47	79	8,178	461	42
1959	5,841	25	19	5,886	413	31
1960	5,794	40	101	5,936	380	25
1961	5,506	117	479	6,102	459	24
1962	5,699	47	763	6,509	428	25
1963	5,259	70	704	6,033	367	18
1964	3,970	77	411	4,457	320	14
1965	3,934	703	464	5,101	335	15
1966	5,993	822	544	7,358	585	20
1967	4,191	1,341	493	6,026	459	16
1968	4,935	1,009	-	5,944	425	..

Source: Derived from D.B.S. data

Although imports of cucumbers during the spring season have been relatively stable for several years, the origin of the imports appears to have been undergoing a significant change since 1964. Before 1965 the U.S.A. supplied about 85 per cent of the cucumbers imported into Canada during the March to June season; beginning in 1965, imports from Mexico have been displacing U.S.A. cucumbers in the Canadian market and, in 1967, Mexican cucumbers supplied 22 per cent and the U.S.A., 70 per cent of the total imports. In 1968, Mexico supplied 17 per cent of the somewhat smaller imports and the U.S.A. 83 per cent. However, the increase in imports of cucumbers from Mexico

in recent years has not resulted in any increase in total imports during the spring season, nor has the average value per pound of imports declined during this period.

Dependence on supplies imported into Canada varies regionally. Ontario, which accounts for more than 85 per cent of Canadian production, is least dependent on imports as a portion of its total requirements, while Quebec, where the consumption is large and the output of greenhouse vegetables is small, is most dependent on imports. In the past six years imports of cucumbers into Ontario have exceeded ten per cent of consumption only once, whereas in Quebec imports of cucumbers varied from 44 per cent to 81 per cent of the province's consumption. A regional comparison of imports and consumption is given in table 28.

Table 28

Imports of Cucumbers as a Percentage of Consumption,
March to June, 1962-67

	<u>Atlantic</u> <u>Provinces</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Prairie</u> <u>Provinces</u>	<u>British</u> <u>Columbia</u>	<u>Canada</u>
	-	imports	as per cent of consumption	-	-	-
1962	49	81	10	17	13	25
1963	37	53	9	8	18	18
1964	44	44	2	6	9	14
1965	56	46	1	17	19	15
1966	60	64	9	12	16	20
1967	59	52	3	15	19	16

Source: Derived from D.B.S. and other data

Quebec, the province most dependent on imports, is by far the largest market for imported cucumbers. In the five-year period, 1963-67, imports into Quebec averaged 3.2 million pounds, 55 per cent of total Canadian imports. Ontario and the Atlantic Provinces are also substantial importers of cucumbers.

Imports into Ontario tend to be more variable, year to year, than imports into other provinces. This is largely because the province depends on early field cucumber production in late June and early July to supplement greenhouse supplies. In years such as 1966 and 1968, when the field crop is late in reaching maturity, imports are relatively large. For example, in 1968 imports into Ontario in the spring period were more than double those of 1967, but 94 per cent of the March to June imports occurred in June.

Table 29

Imports of Cucumbers, by Region, March to June,
1962-68

	<u>Atlantic Provinces</u>	<u>Quebec</u>	<u>Ontario</u> - thousand pounds	<u>Prairie Provinces</u> -	<u>British Columbia</u>
1962	443	3,803	1,657	348	259
1963	454	3,119	1,793	299	368
1964	624	3,147	337	151	198
1965	857	2,994	326	469	455
1966	1,162	3,401	2,071	337	388
1967	1,026	3,367	603	467	563
1968	726	2,976	1,386	455	400

Source: Dominion Bureau of Statistics

Before 1965 the U.S.A. generally supplied between 85 and 90 per cent of Canada's imports in the spring greenhouse season and the Caribbean area (Cuba, the Bahamas and others) supplied most of the remainder. During this period imports from Mexico did not exceed two per cent of the total. As noted earlier, beginning in 1965, imports from Mexico increased sharply and by 1967 were supplying 22 per cent of total imports, though they were a somewhat smaller proportion in the spring of 1968.

Imports from Mexico have displaced U.S.A. cucumbers mainly in the Prairies and British Columbia and to a lesser extent in Quebec. In Ontario and the Atlantic Provinces cucumbers from the U.S.A. continue to supply most of the imports during the spring season, with imports from the Bahamas also supplying a large part of the total in occasional years.

Table 30

Imports of Cucumbers from Mexico, By Region of Entry
March to June, 1962-68

	<u>Atlantic Provinces</u>	<u>Quebec</u>	<u>Ontario</u> - thousand pounds	<u>Prairie Provinces</u> -	<u>British Columbia</u>	<u>Canada</u>
Average						
1962-64	-	6	-	22	37	65
1965	-	291	13	231	168	703
1966	*	353	29	229	210	822
1967	-	564	3	380	393	1,341
1968	-	390	52	333	234	1,009
	-	per cent of region's total imports				-
Average						
1962-64	-	*	-	8	13	1
1965	-	10	4	49	37	14
1966	*	10	1	68	54	11
1967	-	17	1	81	70	22
1968	-	13	4	73	59	17

Source: Derived from D.B.S. data

Tomatoes

Currently, Canada imports about 100 million pounds of tomatoes annually in the spring and fall greenhouse seasons, taken together; these imports are valued at about \$10.3 million. About 96 per cent of the imports are of field-grown tomatoes; the remainder are greenhouse tomatoes originating almost entirely in Ohio and entered into the province of Quebec. Imported tomatoes constitute about 85 per cent of Canadian consumption of all tomatoes in the spring and fall seasons but imports of greenhouse tomatoes in recent years have been only about 18 per cent of Canadian consumption of greenhouse tomatoes.

As noted above, Canada does not produce sufficient quantities of tomatoes to supply the domestic demand in any month of the year. As a result, imports are continuous throughout the year. The volume of imports reaches its lowest levels in August and September, when the domestic field crop is being harvested; the largest volume of imports is generally in May and June, when the tomato harvests in the southern part of the continent are at their peak, but before domestic field tomatoes become available.

Tomatoes are harvested in every month of the year in some part of the North American continent and the beginning of harvest in one area overlaps the end of the harvest season in another. Moreover, some southern areas may produce two crops each year. As the source of Canadian supplies, three regions are of major importance: Florida, California and Mexico.

The unloads of tomatoes from California, Florida and Mexico are tabulated in table 31. As the table shows, California tomatoes begin to assume significance in June, the last full month of the spring greenhouse season and, in relation to the fall crop, in October and November. Imports from Florida begin to replace the declining California supplies in late November and are the principal source of imports in December. The Florida spring crop matures late in March, and in April, May and June, Florida tomatoes again enter Canada in substantial volume. So far as the Canadian greenhouse crops are concerned, imports from Mexico are important only in relation to the spring greenhouse crop and are the principal source of imports during that season.

Imports from California apparently are almost entirely of mature-green tomatoes and imports from Florida, largely of mature-greens. Imports from Mexico are mainly of vine-ripe tomatoes.

Imports of tomatoes, in the spring, increased during the late fifties and were then fairly stable from 1959 to 1965 at about 60 million pounds, annually. Imports increased in 1966 and 1967 but declined again to their previous level in 1968. In the latter year they were 59.4 million pounds valued at \$7.6 million. Imports in the fall were relatively stable from 1957 to 1962 at around 32 million pounds and from 1963 to 1966 averaged about 35 million pounds annually valued at \$3.5 million.

Table 31

Unloads of Tomatoes from California, Florida and Mexico,
at 12 Canadian Markets, January 1967 to February 1968

	<u>California</u>	<u>Florida</u>	<u>Mexico</u>
		carloads(a)	
<u>1967</u>			
January	2	204	213
February	2	92	262
March	-	78	443
April	16	107	309
May	2	262	296
June	85	142	70
July	81	35	8
August	138	1	-
September	137	-	-
October	302	-	-
November	212	82	-
December	15	281	24
<u>1968</u>			
January	2	175	221
February	3	51	294

(a) Includes rail and truck

Source: Canada Dept. of Agriculture, Annual Unload Report

The following comparisons are based on the period, 1957-66, to avoid the distortion which would be introduced by the unusually large volume of tomatoes which was imported in the fall of 1967 at lower unit values.

During the ten years, 1957-66, total imports of spring tomatoes increased by 13 million pounds and of fall tomatoes by only two million pounds. Ten of the 13 million pound spring increase was evident by 1959, and marked a major increase in supplies from Mexico. Imports of spring tomatoes, in total, then showed no particular trend from 1959 until 1965 but increased again after that. Poor crop conditions in Mexico resulted in a decline in imports in the spring of 1968. Imports of fall tomatoes rose between 1957 and 1964 and, until the large imports in 1967, had been declining since that year.

Table 32

Imports of Field and Greenhouse Tomatoes,
Spring and Fall Seasons, Selected Years, 1957-68

	<u>April-June</u>			<u>Oct.-Dec.</u>		
	<u>Greenhouse</u>	<u>Field</u>	<u>Total</u>	<u>Greenhouse</u>	<u>Field</u>	<u>Total</u>
	- '000 lb.	-		- '000 lb.	-	
1957	960	49,960	50,920	434	31,127	31,561
1959	1,350	60,088	61,438	330	31,187	31,517
1961	3,990	56,674	60,664	1,140	30,918	32,059
1963	4,470	56,346	60,816	1,020	34,415	35,435
1964	4,110	54,439	58,549	1,860	35,245	37,105
1965	3,374	56,098	59,472	720	33,724	34,444
1966	3,510	60,205	63,715	847	32,723	33,570
1967	3,180	64,359	67,539	930	41,561	42,491
1968	1,770	57,648	59,418	..	..	..

Source: Derived from D.B.S., Trade of Canada, Imports; Canada Dept. of Agriculture, Annual Unload Report

As has been noted, Mexico is the largest supplier of spring tomatoes and the U.S.A. is the principal supplier of fall tomatoes; in 1967, Mexico accounted for 61 per cent of imports in the spring season compared with only 31 per cent of the total in 1957. For fall tomatoes, the U.S.A. is by far the most important source of supply and has accounted for 94 to 99 per cent of all imports of these for several years. Mexico is the only other source of any consequence of fall tomatoes but has not become relatively any more significant as a source of supply than it was ten years ago.

Table 33

Imports of Tomatoes by Principal Country
of Origin, Selected Years, 1957-68

	<u>April to June</u>			<u>Oct. to Dec.</u>		
	<u>Mexico</u>	<u>U.S.A.</u>	<u>Total</u>	<u>Mexico</u>	<u>U.S.A.</u>	<u>Total</u>
	- million pounds		-	- million pounds		-
1957	15.8	35.1	50.9	2.2	29.3	31.6
1959	25.8	35.6	61.4	7.3	24.2	31.5
1961	21.7	38.3	60.7	1.5	30.5	32.1
1963	23.7	37.1	60.8	1.8	33.6	35.4
1964	26.0	32.5	58.5	1.7	35.2	37.1
1965	28.4	30.6	59.5	2.2	32.2	34.4
1966	34.7	29.0	63.7	1.7	31.9	33.6
1967	41.3	26.2	67.5	0.6	41.9	42.5
1968	30.9	28.5	59.4	..	..	..

Source: D.B.S., Trade of Canada, Imports

Imports of greenhouse tomatoes reached a peak of 6.0 million pounds in 1964 (spring and fall combined) and declined to 4.1 million pounds in 1967. In 1964, at their peak, imports of greenhouse tomatoes constituted 26 per cent of Canadian consumption of greenhouse tomatoes; in 1967 the smaller imports were only 17 per cent of consumption.

The U.S.A. is ordinarily the only country from which greenhouse tomatoes are imported. In an unusual year such as 1967, when the Canadian field crop was delayed by cold weather, some greenhouse tomatoes were shipped by air freight from the Netherlands but exceptional circumstances and high prices are required to induce this movement of greenhouse tomatoes from Europe to Canada.

A comparison of imports from Mexico and the U.S.A. in each month of the spring season indicates that the displacement of U.S.A. tomatoes in the Canadian market has been entirely in May and June. The increase of Mexican shipments in April appears to have made tomatoes available to Canadian consumers at a time when they were previously available only in small quantities from any other source. However, the largest increase in imports from Mexico have occurred in May and June, and have been accompanied by decreases in imports from the U.S.A. in those months, especially in June.

Table 34

Imports of Tomatoes from Mexico and U.S.A.,
by Month, April to June, Selected Years, 1957-68

	Mexico			U.S.A.		
	<u>April</u>	<u>May</u>	<u>June</u>	<u>April</u>	<u>May</u>	<u>June</u>
	- million pounds -					
1957	10.9	4.8	0.1	3.7	13.9	17.5
1959	16.4	9.3	0.1	0.8	9.9	25.0
1961	12.3	8.9	0.5	4.6	11.6	22.2
1963	13.5	9.6	0.6	6.5	11.4	19.2
1964	12.4	9.9	3.6	5.0	10.8	16.7
1965	12.5	11.9	4.0	4.4	9.3	16.9
1966	17.2	12.3	5.2	2.3	8.6	18.1
1967	17.8	15.2	8.3	4.8	8.7	12.7
1968	12.4	10.9	7.6	5.5	10.2	12.9
Change						
1957-68	+1.5	+6.1	+7.5	+1.8	-3.7	-4.6

Source: D.B.S., Trade of Canada, Imports

Although imports of greenhouse tomatoes are a relatively small part of total imports (less than six per cent of the total in the spring and less than three per cent in the fall) they are an important part of the supply of greenhouse tomatoes in the province of Quebec. Quebec production of greenhouse tomatoes is very small and most of the consumption of greenhouse tomatoes in the province is of Ontario or Ohio origin. The relative importance of these various sources of supply is shown in table 35.

Table 35

Origin of Greenhouse Tomatoes Consumed in the
Province of Quebec, by Season, 1962-67

	April to June			Oct. to Dec.		
	<u>Que.</u>	<u>Ont.</u>	<u>Ohio</u>	<u>Que.</u>	<u>Ont.</u>	<u>Ohio</u>
	-	'000 lb.	-	-	'000 lb.	-
1962	105	732	2,760	25	1,156	990
1963	55	779	4,140	19	2,835	930
1964	60	2,618	4,110(a)	8	1,963	1,830
1965	61	3,096	3,344	17	1,071	720
1966	37	1,276	3,510	53	2,002	847
1967	55	2,093	3,180(a)	196	2,266	930

(a) Includes 2 truckloads from Illinois

Source: Canada Dept. of Agriculture, Annual Unload Report; D.B.S., Cat. No. 22-222

It is noteworthy that in the spring Ohio supplies more greenhouse tomatoes to the province of Quebec than does Ontario. In the fall, it appears that Ohio supplies about one-third of Quebec's supply. It is probable that the preference of Quebec consumers for pink tomatoes is a major factor in the movement of Ohio tomatoes into the province, particularly when it is recognized that the preference in Toronto, the major outlet for the Leamington production, is for red varieties. Leamington growers might hesitate to expand their production of pink varieties with specific orientation to the Montreal market, though there would seem to be a substantial potential increase in their total market if they could replace the imported greenhouse tomatoes in the Montreal market; moreover, the imported product tends to sell at a somewhat higher price in that market than do Leamington greenhouse tomatoes.

Until 1962 small quantities of greenhouse tomatoes were also imported into Ontario but only an occasional truckload has been entered into the province since then. Hence, the Ontario growers are supplying essentially all the present Ontario market for greenhouse tomatoes. There is no statistical evidence of the importation of greenhouse tomatoes into other provinces.

Regional Imports of Tomatoes

Spring Tomatoes

During the five years, 1963-67, Canadian imports of tomatoes during the spring greenhouse season averaged 62 million pounds valued at \$6.2 million. More than two-thirds of the total was entered into Ontario and Quebec. The distribution of spring imports is given below:

Table 36

Imports of Tomatoes, by Region, April to June,
Average, 1963-67

	<u>Quantity</u>	<u>Value</u>	<u>% of Canada Total</u>	
	million lb.	\$ million	<u>Quantity</u>	<u>Value</u>
Atlantic Provinces	3.1	0.3	4.9	5.0
Quebec	23.9	2.5	38.6	40.4
Ontario	19.1	1.8	30.8	28.8
Prairie Provinces	10.3	1.1	16.6	17.8
British Columbia	<u>5.7</u>	<u>0.5</u>	<u>9.2</u>	<u>8.1</u>
Canada	62.0	6.2	100.0	100.0

Source: Derived from D.B.S. data

The dependence of the different regions on imported tomatoes during the spring greenhouse season varies, but all regions depend heavily on imported supplies. Ontario and British Columbia, the two principal greenhouse vegetable producing provinces, depend proportionately less on imports; the Prairies and Quebec are most dependent on them. However, in spite of their local production of greenhouse

tomatoes, more than two-thirds of the consumption of tomatoes in the spring season, in Ontario and British Columbia, is of the imported, field-grown product.

Table 37

Dependence of Various Regions on Supplies of
Imported Tomatoes, April to June, 1962-67

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
	-	imports as per cent of consumption	-	-	-	-
Atlantic Provinces	91	86	87	82	82	82
Quebec	96	97	90	88	95	92
Ontario	81	78	77	78	69	77
Prairie Provinces	98	98	98	98	98	98
B.C.	<u>68</u>	<u>67</u>	<u>67</u>	<u>67</u>	<u>68</u>	<u>69</u>
Canada	88	87	84	83	82	84

Source: Derived from D.B.S. data

As noted earlier, greenhouse tomatoes are imported in significant amounts only into the province of Quebec. During the spring season, imports of greenhouse tomatoes, almost entirely from Ohio, account for more than half the consumption of greenhouse tomatoes in the province.

The displacement of U.S.A. tomatoes by Mexican, to which reference was made earlier, has occurred mainly in the Central and Prairie regions. As table 38 indicates, in the five-year period 1964-68, imports from Mexico increased by 4.9 million pounds while those from the U.S.A. declined by four million pounds. In 1964 about 40 per cent of Quebec and Ontario imports originated in Mexico; in 1968 imports into these two provinces, from Mexico, were nearly one-half of the total; in the Prairies, the increase in imports originating in Mexico was from approximately 57 per cent of total imports in 1964 to 73 per cent in 1968.

Table 38

Imports of Tomatoes, by Region of Entry and Country
of Origin, April to June, 1964 and 1968

	<u>1964</u>		<u>1968</u>		<u>Change 1964-68</u>		
	<u>Mexico</u>	<u>U.S.A.</u>	<u>Mexico</u>	<u>U.S.A.</u>	<u>Mexico</u>	<u>U.S.A.</u>	<u>Total</u>
	-		million pounds		-		
Atlantic	0.5	2.4	0.4	2.3	-0.1	-0.1	-0.2
Quebec	8.2	15.3	9.0	13.0	+0.8	-2.3	-1.5
Ontario	7.9	9.6	9.6	8.3	+1.7	-1.3	+0.4
Prairies	5.5	4.2	7.4	2.7	+1.9	-1.5	+0.4
B.C.	<u>3.9</u>	<u>1.0</u>	<u>4.5</u>	<u>2.2</u>	<u>+0.6</u>	<u>+1.2</u>	<u>+1.8</u>
Canada	26.0	32.5	30.9	28.5	+4.9	-4.0	+0.9

Source: Derived from D.B.S. data

Fall Tomatoes

Imports of fall tomatoes are slightly more than one-half as large as the volume of imports of spring tomatoes. During the five years, 1963-67, imports from October to December averaged nearly 37 million pounds, with an average value of \$3.3 million. In general, the regional distribution of fall imports is very similar to that of spring imports.

Table 39

Imports of Tomatoes, by Region, October to December
Average, 1963-67

	<u>Quantity</u> million lb.	<u>Value</u> \$ million	<u>% of Canada</u> Quantity	<u>Total</u> Value
Atlantic Provs.	2.0	0.2	5.5	6.2
Quebec	14.2	1.2	38.9	35.3
Ontario	9.6	0.8	26.3	24.9
Prairie Provs.	6.3	0.7	17.2	21.1
British Columbia	<u>4.4</u>	<u>0.4</u>	<u>12.0</u>	<u>12.6</u>
Canada	36.6	3.3	100.0	100.0

Source: Derived from D.B.S. data

Most Canadian imports of tomatoes, in the last quarter of the year, have been from the U.S.A. and all indications point to a continuation of this situation. California is the principal supplier in October and part of November, with Florida becoming the leading supplier towards the end of November. Mexican tomatoes begin to arrive in Canadian markets during December but it is not until sometime in January that they are, ordinarily, available in any substantial volume. In sharp contrast to the situation in the spring of the year, imports from the U.S.A. in the fall have increased substantially while those from Mexico have generally been lower in the 1960's than in the 1950's.

Table 40

Imports of Tomatoes, by Region of Entry and Country
of Origin, October to December, 1963 and 1967

	<u>1963</u>		<u>1967</u>		<u>Change 1963-67</u>		
	<u>Mexico</u>	<u>U.S.A.</u>	<u>Mexico</u>	<u>U.S.A.</u>	<u>Mexico</u>	<u>U.S.A.</u>	<u>Total</u>
			- thousand pounds				
Atlantic Provs.	28	1,649	-	2,083	-28	434	406
Quebec	604	14,453	44	16,886	-560	2,433	1,873
Ontario	255	9,949	32	10,881	-223	932	709
Prairie Provs.	408	4,480	218	6,944	-190	2,464	2,274
B.C.	<u>543</u>	<u>3,057</u>	<u>294</u>	<u>5,110</u>	<u>-249</u>	<u>2,053</u>	<u>1,804</u>
Canada	1,837	33,589	588	41,903	-1,249	8,314	7,065

Source: Derived from D.B.S. data

The increase in fall imports has been larger than that of spring imports in recent years. This increase has occurred mainly in the month of November; October imports have shown no appreciable trend in recent years and December imports have risen by about two million pounds compared with the increase of around five million pounds in November imports.

Most of Canada depends almost completely on foreign supplies of tomatoes during the last quarter of the year. Only in Ontario do domestic supplies account for any appreciable part of the consumption; in all other parts of Canada, imports supply from 83 to 99 per cent of the consumption in the fall.

Table 41

Dependence of Various Regions on Supplies of
Imported Tomatoes, October to December, 1962-67

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
	-	imports as per cent	of consumption			-
Atlantic Provs.	95	84	90	95	85	83
Quebec	90	84	88	92	86	87
Ontario	73	77	74	69	69	78
Prairie Provs.	99	98	99	97	98	99
B.C.	<u>88</u>	<u>94</u>	<u>91</u>	<u>92</u>	<u>93</u>	<u>94</u>
Canada	87	84	86	85	83	87

Source: Derived from D.B.S. data

Imports of greenhouse tomatoes, in the fall, are currently less than one million pounds and have declined somewhat during the past few years; they are about 12 per cent of consumption and are entered entirely into Quebec. In most years all of these imports are from Ohio.

Exports

Canada exports relatively small amounts of cucumbers and tomatoes during the spring and fall greenhouse seasons. All of these are exported to the U.S.A. and almost all are from Ontario; British Columbia, the only other exporting province, ships only occasional carloads of these products. Chicago, Cleveland and Detroit appear to be the principal destinations for Ontario produce and Portland and Seattle are the main markets for B.C. greenhouse products.

Exports of cucumbers appear to be increasing. In 1966, the latest year for which published data are available, Canada exported, in the spring greenhouse season, about 1.8 million pounds of cucumbers with an estimated value of approximately \$230,000. Of these, an estimated 1.7 million pounds originated in Ontario. Information given to the Board suggests that most of the cucumbers exported from British Columbia were of the Long English varieties; Ontario exports were of the common white spine varieties. As noted earlier, there do not appear to be imports of greenhouse cucumbers into Canada and, therefore,

the flow of Canadian cucumbers into the U.S.A., all greenhouse-grown, represents a net export.

Canadian exports of spring tomatoes, also all greenhouse-grown, are only about one-tenth as large as the quantity of greenhouse tomatoes imported into Canada during the spring. Exports of fall tomatoes are probably slightly overstated in some years by the inclusion of some field-grown tomatoes in October.

Table 42

Exports of Greenhouse Cucumbers and Tomatoes, 1961-67

	<u>Cucumbers</u>		<u>Spring Tomatoes</u>		<u>Fall Tomatoes</u>	
	'000 lb.(a)	\$'000(b)	'000 lb.	\$'000	'000 lb.	\$'000
1961	120	12	..	..	..	..
1962	1,260	135	212	33	206	33
1963	780	81	91	13	325	47
1964	1,110	131	118	30	615	114
1965	1,260	149	176	45	937	205
1966	1,770	230	377	84	743	135
1967	1,920	224	365	76	780	104

(a) From U.S. Dept. of Agriculture, Annual Unload Report

(b) Assumes unit value of sales of Essex County Associated Growers

Source: D.B.S., Trade of Canada, Imports; U.S.D.A., Annual Unload Report

Marketing Greenhouse Cucumbers and Tomatoes

The Institutions

Many agencies are involved in the marketing of greenhouse vegetables in Canada each of which has some effect on the prices received by growers and those paid by consumers of greenhouse or field tomatoes and cucumbers. The impact of these agencies on the marketing process may be a reflection either of the fees charged for their services, including markups at different trading levels, or of their statutory powers to determine the terms and conditions of trade in these products.

Such matters as grade standards, the terms under which prospective dealers may achieve entry into the produce trade and the methods of handling and storing vegetables are, or may be, the subject of both federal and provincial statutes.

In Ontario, and as far as the Board has been able to determine, only in Ontario, a marketing Board has been established under provincial regulations with certain powers to regulate the marketing of Ontario-grown greenhouse tomatoes and cucumbers.

In areas in which greenhouse vegetables are grown shippers are located whose principal function is to purchase produce from greenhouse owners, to grade and size it, to pack it in suitable containers, and to merchandize the product to dealers in major consuming centres.

The shippers may be individual growers operating on their own behalf, individuals or companies who represent a number of growers, or producer-owned cooperative organizations such as exist in Alberta and Ontario.

In large urban centres, brokers are active in selling greenhouse vegetables on behalf of shippers or in buying these for wholesale dealers or others; brokers do not take legal title to the goods and operate on commissions which are paid by shippers.

Wholesale fruit and vegetable dealers operate in all markets as intermediaries between shippers and retailers; some agencies which perform the functions of a wholesale dealer are part of a chain store operation.

Retail stores may purchase produce through a broker, from a wholesaler or directly from shippers. Larger supermarkets or chain retailers may undertake some of the functions of these intermediaries.

The section which follows describes the functions and the impact on the marketing process of the performance of these functions of the various agencies listed above.

The marketing agency with the greatest potential impact on the marketing of greenhouse vegetables is the Ontario Greenhouse Vegetable Producers' Marketing Board which was created in 1967 by the authority of the Ontario Farm Products Marketing Act. Under the terms that Act and its regulations "the Ontario Greenhouse Vegetable Producers' Marketing Plan" was established with provision for the Producers' Marketing Board and the powers which it could exercise. Among many other powers, including the power to levy a fee for its services, the Producers' Marketing Board could "determine from time to time the price or prices that shall be paid to producers for greenhouse vegetables or any class, variety, grade or size of greenhouse vegetables and to determine different prices for different parts of Ontario". Also, Regulation 116/67 authorized the Marketing Board to purchase greenhouse vegetables when it deemed such purchases desirable. Subsequent to the enactment of the Provincial regulations, Federal order, P.C. 1967-1032 dated May 25, 1967, was issued in which it was stated that the Ontario Greenhouse Vegetable Producers' Marketing Board "is authorized to regulate the marketing of greenhouse vegetables in inter-provincial and export trade and for such purposes may, with respect to persons and property situate within the Province of Ontario, exercise all or any powers like the powers exercisable by the Board in relation to the marketing of greenhouse vegetables locally within the Province of Ontario ...".

While the powers granted to the Marketing Board give it significant control over the price of Ontario greenhouse vegetables, in practice these powers are limited by commercial and financial considerations. For example, although the Marketing Board is empowered

to purchase greenhouse vegetables, it must sell them in competition with imported greenhouse or field-grown products whose prices the Board cannot control. Moreover, the Board cannot withhold these highly perishable products from the market for any appreciable time without suffering severe losses from their deterioration. The Tariff Board heard of no cases in which the Marketing Board ever had entered the market as a purchaser in its own right. In addition, the Marketing Board has no jurisdiction over the marketing and pricing of field-grown vegetables produced in Ontario but in some periods, for example, late June and early October, prices for greenhouse vegetables established by the Board must take into account the competition of domestic field-grown vegetables. The limitation of the Marketing Board's ability to set prices is illustrated by the following comment at the public hearing by the Chairman of the Marketing Board:

"We had to meet the eight cent price [for imported cucumbers] and we have a perishable product, so when we are in heavy volume we are forced at that point to meet what is coming into the country. So, although we technically have the right to set a price, we are governed to a great extent on what the import prices are." (Vol. 2, p. 184)

Although the impact of the Marketing Board on prices of greenhouse vegetables is limited by considerations such as those outlined above, it can, nevertheless, exercise a significant effect on prices received by growers. For example, the Board determines the charges that will be made for the services performed by shippers and in this way assures that these will be uniform to all growers. In addition, to the extent that the Board is successful in enforcing uniform pricing for sales by all shippers, price cutting is minimized during short periods of time when a relatively small number of growers may have unusually large amounts of produce to sell. The Chairman of the Marketing Board commented on this, saying:

"... in years gone by it was felt that these shippers [in Essex County] between them were in essence cutting the prices at certain stages of the crop. We are attempting, at least, to stabilize this price within an area and we feel that this is being done." (Vol. 1, p. 47)

It is also probable that the Marketing Board can exert some influence on price levels when it controls a large percentage of the market supply. In the spring, during the peak of the cucumber production period, the Ontario greenhouse industry supplies more than 80 per cent of Canadian consumption of cucumbers. For this large proportion of the total supply the Board can set minimum selling prices for sales anywhere in Canada at a level which is just short of attracting an unusually large volume of imported cucumbers. In this regard, a single seller like the Marketing Board is more likely to obtain higher returns for growers than might be expected to be obtained under free market conditions. Of course, the degree of success is dependent on the knowledge and skill exercised by the Board in its selling operations, and the ceiling on the prices which it can set will continue to be determined in relation to the laid-down cost of imported produce.

In addition to its power to specify different minimum prices for greenhouse vegetables in different parts of Ontario, the Marketing Board can authorize sales to more distant markets either at higher or lower prices than for sales in Ontario or Quebec. By such action the Board could reduce the supply which is available in its major markets and thus enhance the selling price of that larger part of the production in these markets. The average returns to producers for all sales might thus be increased, and because receipts from all sales are pooled to establish uniform returns to producers, each producer might be somewhat better off.

In general, however, according to testimony at the hearing, the Marketing Board attempts to maintain a uniform, f.o.b. Leamington, price to all purchasers, regardless of their location. In the words of the Marketing Board Chairman:

"... we have the power to have a different price in the west but our Board as such does not make this a general practice; it is almost always one price to the west, to the east in Ontario or the United States." (Vol. 1, p. 48)

The testimony of the Marketing Board at the public hearing indicates that it is a matter of policy with the Board to set a minimum price for greenhouse vegetables once a week. However, it was stated that, when the flow of imported produce justified such action, the Board will set a price "not once a week but up to twice a day".

Under Ontario Regulation 116/67 the Marketing Board has authority to fix service charges to pay its expenses in carrying out the purposes of the Marketing Plan. Such charges have a limit of one-half of a cent per pound of tomatoes and $2\frac{1}{2}$ cents per dozen of cucumbers. At the public hearing it was indicated that this maximum service charge was levied by the Marketing Board in 1967, in its first year of operation, and that for 1968 the levy had been reduced to 2 cents per dozen of cucumbers and four-tenths of a cent per pound of tomatoes. In terms of the usual size of containers in which they are sold this amounts to 4 cents per carton (10 pounds) of tomatoes and 4 cents per two-dozen carton of cucumbers (20 pounds).

The Marketing Board is also authorized to appoint agents to market greenhouse vegetables and to determine the remuneration of such agents. In practice, the Marketing Board usually appoints local shippers of tomatoes and cucumbers as its agents and, in 1967 and 1968, determined the remuneration of such shippers to be 9 per cent of the f.o.b. shipping-point price. In addition, the shipper is allowed to deduct, from the f.o.b. price, a fee of 25 cents per carton as payment for the cost of the package and packaging.

In Ontario there are several independent shippers of greenhouse tomatoes and cucumbers and one cooperative shipper, the Sun Parlor Greenhouse Growers Cooperative Limited. All shippers, cooperative and independents, are treated alike by the Marketing Board: all are required to sell produce at no less than the specified minimum price; all must use the same pooled return per unit to calculate payments to producers; and all are required to make the same deductions from pooled returns in making payment to producers. Subject to these constraints, individual shippers make their own arrangements with

producers and negotiate sales directly with brokers, wholesalers, or retailers. The shippers, in addition to being packers and merchandizers of produce, are also its graders; they pack according to official grades, subject always to subsequent inspection by provincial and federal officers.

In addition to the regulations which the Marketing Board can impose, there are various controls which are administered by the federal Department of Agriculture. For example, every broker or dealer who buys or sells interprovincially or internationally requires a federal licence, and this implies some regulation of the activities of the brokers and dealers. Also, the federal Department of Agriculture inspects cars to determine damage, spoilage or incorrect grading, and for settlement of claims arising therefrom.

The federal Department of Agriculture also maintains certain services such as a marketing information service which involves the collection of prices in all parts of Canada and supplying information to news media and to dealers, buyers and others interested in production and marketing conditions.

Distribution Fees and Markups

The services of fruit and vegetable brokers may be enlisted by shippers to sell, or by buyers to obtain, greenhouse vegetables. When a broker's services are used by shippers or by buyers, the commission is paid by the shipper out of the commission which the Marketing Board allows him to deduct. According to testimony at the hearing the brokerage fee is usually about $3\frac{1}{2}$ per cent, thus leaving to the shipper $5\frac{1}{2}$ per cent commission for produce which involves a broker's services.

Where brokers' services are not used, the shipper receives the full f.o.b. shipping point price from either wholesalers or chain-store buyers. Of course, in such an event, the shipper must perform the services of the broker, including that of finding a buyer. Major supermarket chains often buy directly from shippers; smaller retailers ordinarily buy only through wholesalers or brokers. Wholesalers' markups on produce handled by them are variable and not subject to Marketing Board regulation. Wholesalers' markups may range from 5 to 25 per cent of their laid-down cost, and are probably at least 10 per cent on average.

Greenhouse cucumbers and tomatoes are usually subject to a greater percentage markup than other vegetables handled by the produce departments of retail stores. Because of this and the smaller volume of sales relative to these other products, greenhouse cucumbers and tomatoes are not featured as "specials" with any frequency.

The Board was informed by the spokesmen of one of Canada's largest retail grocery chains that the usual practice in their produce departments was to apply a markup of 50 per cent on the laid-down cost of these greenhouse vegetables. For example, if the cost to the chain, delivered in Montreal, was 30 cents a pound for greenhouse tomatoes the retail price would automatically be set at 45 cents a pound. They also stated that smaller markups would be used if the products were featured as weekend specials. Retailers and others interviewed by the Board

indicated that a markup, at retail, of 20 per cent and sometimes even less would be common when greenhouse tomatoes or cucumbers were used as specials though, as noted, greenhouse vegetables are not frequently featured as specials.

The markups at the various stages in the distribution system reflect the cost of the services provided at each stage, for overhead expenses and profits, and must also provide for losses and waste due to damage or spoilage. Although grading regulations specify maximum tolerances for damaged or otherwise unacceptable produce, greenhouse vegetables are very perishable and waste, particularly at the retail level, may be very high for individual lots, although probably a smaller factor than for imported field produce which has generally travelled much longer distances.

The costs and price markups as tomatoes and cucumbers move from the greenhouse owner's truck at the shipper's receiving platform to the ultimate consumer in a large chain store is depicted in table 43. The Ontario Marketing Board fees and the shippers' commission used are those in effect in 1968. The wholesaler's markup of 11 per cent was cited at the public hearing by a large wholesale dealer in the Montreal area as about average. The f.o.b. shipping point prices from which prices at other trading levels have been calculated have been derived from reports published by the Essex County Associated Growers and are the averages for the period 1963-66, inclusive. For both products a trucking cost of one cent per pound between Leamington and Toronto is included; costs to other centres would depend on their distance from Leamington.

Table 43

Representative Charges and Markups for Ontario Greenhouse
Cucumbers and Tomatoes Sold in Toronto, 1968

	Cucumbers		Tomatoes (Spring)	
	per ctn. (a)	per lb.	per ctn. (b)	per lb.
	\$	¢	\$	¢
Net return to grower	1.86	9.29	1.86	18.6
Marketing Bd. fee	.04	.20	.04	.4
Grading, packing, carton	.25	1.25	.25	2.5
Shippers commission, 9%	.21	1.06	.21	2.1
Price f.o.b. Leamington	2.36(d)	11.80(d)	2.36(d)	23.6(d)
Transportation to Toronto	.20	1.00	.10	1.0
Wholesale markup, 11%	.28	1.40	.27	2.7
Cost to retailer, delivered	2.84	14.20	2.73	27.3
Retailer's markup, 40%(c)	1.14	5.68	1.09	10.9
Price to consumer	3.98	19.88	3.82	38.2

(a) 2 dozen - approximately 20 pounds

(b) 10 pounds

(c) Assumes that two-thirds of volume of sales is marked up 50% and remainder is sold in featured specials and is marked up 20%

(d) Average price at Leamington, 1963-66

While the foregoing discussion has been centered on Ontario greenhouse tomatoes and cucumbers, it is applicable, as regards sellers' markups, to imported produce as well. However, retailers will more frequently run specials on imported field-grown tomatoes than they do on greenhouse tomatoes because the former are sold in relatively large volume at significantly lower prices.

Little direct evidence was received of the size of markups on greenhouse produce grown in other parts of Canada, though some information has been made available by the Red Hat Cooperative Limited, which markets a substantial part of the greenhouse tomato and cucumber production of the Medicine Hat-Redcliff area of Alberta, and some information is also available regarding marketing arrangements in British Columbia and Nova Scotia.

At Medicine Hat, the usual charge by the Cooperative for the services which it performs is 55 cents per carton of 24 cucumbers and 80 cents per 20-pound carton of tomatoes. These charges are deducted from the price, f.o.b. Medicine Hat, and cover the cost of the container and the cooperative's services as packer, grader and merchandizer. The price, f.o.b. Medicine Hat, is the price to retailers; wholesalers are allowed a 10 per cent discount from this listed f.o.b. price. It is noteworthy that this allows an 11 per cent markup to wholesalers, the same percentage as was cited at the public hearing by a Montreal wholesale dealer.

The Nature of the Market

Cucumbers and tomatoes, whether greenhouse or field-grown, are highly perishable products and under the best of conditions they must be marketed within two or three weeks after harvest. As a result, they are very vulnerable to rapid and relatively large changes in price in response to changes in either supply or demand, of even very short duration.

At the public hearing, different points of view were presented to the Board as to whether greenhouse cucumbers and tomatoes are regarded as luxuries by consumers. In this context, the term "luxury" is difficult to define and is avoided here.

As the ensuing analysis indicates, consumers are willing to pay more for greenhouse cucumbers than for imported field cucumbers, although the margin or premium is small. This preference is reflected at the wholesale level of trade and in returns to producers. For tomatoes the situation is very different. The magnitude of the premium which consumers are prepared to pay for greenhouse, relative to field-grown, tomatoes is generally very substantial. In fact, at the retail level, prices of greenhouse tomatoes are frequently more than double the price of field tomatoes. Thus, the two kinds of tomatoes are clearly differentiated in consumers' minds, their preference for greenhouse tomatoes being evidenced by the premium they regularly pay to obtain them. As in the case of cucumbers, this premium is reflected in wholesale prices and in returns to growers.

In this regard it is important to note that the premium which Canadian wholesalers pay for U.S. greenhouse tomatoes relative to U.S. field tomatoes is even larger than the premium which they pay for Canadian greenhouse tomatoes. A similar situation prevails in the U.S.A. where dealers and consumers also pay substantial premiums for greenhouse relative to field tomatoes.

From the foregoing it appears that there is a fairly homogeneous market in Canada for field and greenhouse cucumbers. Greenhouse cucumbers command a small premium over the field product but it is irregular and not large. Canadian greenhouse cucumbers supply about 85 per cent of the Canadian market in the spring season. The competition which they face is from imports which originate chiefly in Florida, although other states, Mexico and Caribbean countries also ship relatively small quantities to Canada in the March to June season.

For tomatoes, on the other hand, there are, in effect, two fairly distinct markets, one for field tomatoes, all of which are imported during the spring and fall greenhouse seasons, the other for greenhouse tomatoes, most of which are produced by the Canadian greenhouse industry. Canadian greenhouse tomatoes supply a market demand which is related to, but not directly competitive with, a market demand for imported field tomatoes. The market in Canada for greenhouse tomatoes is currently between one-fifth and one-quarter of the size of the market for field tomatoes.

Geographic Considerations

Canadian greenhouse vegetable production is concentrated in a small area around Leamington, Ontario. This area accounts for about 80 per cent of Canada's production of greenhouse cucumbers and about two-thirds of the production of greenhouse tomatoes. The principal market area for Leamington produce is in the populated area within 200 or 300 miles of the growers, in which, of course, the Toronto market predominates. However, a substantial volume of produce goes to markets outside this area, mainly from Edmonton to Quebec City, although sales are made from coast to coast. As a result, Leamington produce sets the price, or has a substantial influence on the price, for greenhouse products grown in other parts of Canada. Thus, it would be expected that prices for greenhouse products should increase as the distance from Leamington increases. Because the principal market for Leamington products is Toronto, that city is a convenient and appropriate market for making price comparisons with other regional markets.

As earlier sections of this report indicated, the origin of supplies of imported produce is determined partly by the availability of supplies but partly, also, by the relative distance of alternative sources of supply. For example, in November, when both California and Florida have tomatoes available for shipment, western provinces will tend to favor California and eastern provinces Florida, because of differences in distance and therefore costs of transportation. In general, that part of Canada west of the Great Lakes is more dependent on supplies from California and Mexico while the region east of the Great Lakes is relatively more dependent on Florida. There are times, of course, as in October, when supplies of tomatoes are available in volume only from one source, in this case California.

Pricing and Prices

Product Specifications

The price relationships which are most relevant to this Reference are those of domestic greenhouse tomatoes and cucumbers and those of imported tomatoes and cucumbers, both field and greenhouse. As noted elsewhere, no greenhouse cucumbers are known to be imported but significant quantities of greenhouse tomatoes are regularly imported. The prices of domestic field crops are of no immediate interest, though at some times of the year they affect the price of the greenhouse produce.

Tomatoes and cucumbers sold in Canada, whether imported or domestic, must comply with Canadian grading regulations, federal, provincial or both. Domestic produce would be graded and packed according to the appropriate regulations, as a matter of course; most imported produce would also encounter no difficulty in this respect. To U.S. and Mexican shippers Canada has been an important market for many years and Canadian requirements regarding grades, packages and other matters, whether federal or provincial, are well known to them. Moreover, there is sufficient similarity between U.S. and Canadian grading standards that dealers on both sides of the border have no problems regarding comparability of particular standards.

From information made available to the Board it would appear that most greenhouse and imported cucumbers and tomatoes comply with the standards for the Canada No. 1 Grade. Accordingly price references in this report are related principally to that grade. However references to average prices obtained by growers for a whole crop over the course of a season, or to the average declared value of imported produce, of course, will include produce of grades other than No. 1.

Canadian grading regulations exclude size as a determinant of grade except for specifying the minimum acceptable size and the maximum variation in size in a container. Thus so long as cucumbers are at least six inches long or tomatoes are at least $1\frac{1}{2}$ inches in diameter, they could be graded Canada No. 1. A carton of tomatoes could contain very small tomatoes ($1\frac{3}{4}$ inches in diameter) or very large ones (4 inches in diameter) and both cartons could be No. 1's, so long as the variation in the size of the fruit in the container did not exceed the maximum tolerance.

Consumers appear to prefer large tomatoes to small ones and they will pay more per pound for larger tomatoes. As a result the trade has adopted size designations such as "large", "medium" and "small" which are used as convenient descriptions for trading. However, designations such as "No. 1 large" have no legal status as a size description.

In contrast to Canadian practice, U.S. grading regulations almost invariably specify size as one of the determinants of grade. U.S. grade designations, like the Canadian, are numerical, the No. 1 grade being the principal grade imported into Canada. In addition to the grade, U.S. tomatoes must also bear a size description which is expressed in terms such as 6 x 6, 6 x 7, 7 x 7, and so on. The product of the numbers indicate the total number of tomatoes which can be packed, according to standard practice, in one layer of a standard

carton. Thus the designation 6 x 7 indicates that 42 such tomatoes can be packed in one layer and that six will lie along one side and seven along the other side. Accordingly, as the numbers become larger the tomatoes which they describe will be smaller. The smallest tomato size listed in the U.S. grade standards is 7 x 8, with a minimum diameter of $1\frac{1}{4}$ inches; the largest is 4 x 4, with a minimum diameter of $3\text{-}5/16$ inches. Maximum diameters are also specified for each size designation.

The information received by the Board regarding the relationship between unofficial Canadian size designations and official U.S. sizes is summarized below.

Table 44

Comparison of U.S. and Canadian Size
Designations for Tomatoes

<u>U.S. Official Sizes</u>	<u>Canadian Trade Descriptions</u>
4 x 4) 4 x 5) 5 x 5)	Very large
5 x 6) 6 x 6)	Large
6 x 6) 6 x 7)	Medium
7 x 7) 7 x 8)	Small

As the table indicates, Canadian trade terms are not precise and a size such as 6 x 6 will be recognized as "large" by some dealers and as "medium" by others.

For cucumbers, as for tomatoes, Canadian grades do not specify size except for minimum length and maximum variation within a container. However, the regulations require that cucumbers be sold in cartons of specified dimensions and this affects the allowable size of the cucumbers in the carton. Ontario greenhouse cucumbers are usually packed in one of three sizes of cartons which, in the Ontario grading regulations, are designated as "King", "Queen" and "Prince" cartons. Federal grading regulations require that such cartons contain two dozen cucumbers. Given these requirements, plus the requirement that cucumbers be properly packed (so as to be neither slack nor overpressed) in a carton, it follows that the "King" carton, the largest, will contain larger cucumbers than either of the other two sizes of carton. The names assigned in law to cartons are thus in effect applicable to their contents, and the trade when ordering Ontario greenhouse cucumbers will specify Prince, Queen or King cucumbers, depending upon the size required. Even a Super King cucumber is recognized in the trade, though it does not appear to be recognized in the Ontario regulations.

The information available to the Board indicate that King cucumbers would average 22 pounds per carton of 24; Queens would average 20 pounds, and Princes 18 pounds.

Greenhouse cucumbers produced in Alberta and Nova Scotia are also marketed in cartons with names similar to those used in Ontario, although in Alberta the "Prince" cucumber has apparently become a "Princess". British Columbia greenhouse cucumbers of the common white spine varieties are usually marketed in cartons which are specified in federal grading regulations as having particular dimensions, and which usually hold from $2\frac{1}{2}$ to 3 dozen cucumbers, depending upon size. The Board has been informed that these cartons are usually packed to contain 30 pounds of cucumbers. Long English cucumbers are packed in wooden boxes which contain one dozen cucumbers.

In the U.S.A., cucumber sizes are specified in the grading regulations and the grades are "U.S. Fancy", "U.S. No. 1", "U.S. No. 1 Large", "U.S. No. 1 Small" and "U.S. No. 2". The U.S. No. 1 grade specifies a maximum diameter and a minimum length (6 inches); No. 1 Small specifies an allowable range of diameters, with no length specification; No. 1 Large specifies minimum diameter and length, but no maximum diameter or length. U.S. cucumbers may be purchased to a more precise size specification than is given in the grade regulations by specifying the required length.

Mexican tomatoes intended for export are shipped from the growing areas to Nogales, Mexico, which is across the river from Nogales, Arizona. The tomatoes are graded and packed on the Mexican side of the border in large, specially designed facilities built for this purpose. Produce which is intended for the U.S.A. and some which is intended for Canada is graded and packed according to U.S. specifications. However, a considerable proportion of the tomatoes that are on order from Canadian dealers is graded and packed to Canadian standards. As a result both of the major sources of supply of Canadian cucumbers and tomatoes grade and pack their produce either according to U.S. or Canadian specifications.

Although the size of tomatoes has a significant effect on their price, for cucumbers size appears to be relatively unimportant in this respect. For example, from April to June of 1967, the Toronto price of Ontario, No. 1 Kings was about 15 cents a pound compared with 14.7 cents a pound for No. 1 Queens, in the same period. This appears to be the general situation in other markets as well.

Color distinctions for tomatoes, as between varieties which are red and those which are pink when mature, may have a significant effect on the prices paid. The Montreal market generally prefers a pink tomato, while other Canadian markets prefer the reds. In Montreal pink tomatoes command a substantial price premium over red tomatoes of comparable grade and size. Red greenhouse tomatoes from Ontario are usually packed in ten pound cartons, pinks, as in Ohio, the principal competition, in eight pound cartons.

Most imported field-grown tomatoes are of red varieties, including those sold on the Montreal market. However, imported greenhouse tomatoes, of which a considerable number reach Montreal from the Cleveland, Ohio, area, are usually of the pink varieties and are sold there at higher prices than are Ontario pinks.

Packages

The packages in which greenhouse and imported tomatoes are packed differ according to their origin, and because of other factors. As noted earlier, most Ontario greenhouse tomatoes are sold in eight or ten pound cartons, depending on color; greenhouse cucumbers, except for those from British Columbia, are packed in cartons designed to hold 24 of the fruit of a particular size. The size of pack can have an effect on the unit price of the produce.

Most field tomatoes imported from the United States or Mexico enter Canada in 40-pound containers, if the tomatoes are "mature-green". "Vine-ripe" tomatoes are commonly packed in 20-pound containers, if from Florida and in 30-pound containers, if from Mexico. Vine ripers are not sufficiently firm to withstand the pressure in 40-pound containers.

Cleveland-area greenhouse tomatoes are almost invariably shipped to Canada in 8-pound cartons.

The familiar 14-ounce "tube" of tomatoes is usually packed by Canadian wholesalers or retailers from imported tomatoes purchased in larger containers, although in some areas, the Atlantic Provinces in particular, tomatoes are sometimes imported already packaged in the 14-ounce tubes. Canadian greenhouse tomatoes are not sold in these tube packages.

Cucumbers are usually imported into Canada in bushel hampers or baskets which contain about 48 to 50 pounds of cucumbers, or in cartons of 24 cucumbers; the former account for most of the volume of imports.

Analysis of Cucumber Prices

Over the course of the past ten years the returns to producers from their sales of greenhouse cucumbers have been fairly stable. Some reduction in returns per pound occurred in the early sixties, but more recently returns have recovered to earlier levels. As the principal producing province, Ontario has most influence in determining the general pattern of Canadian prices.

Table 45

Average Returns to Growers for Greenhouse Cucumbers,
by Principal Provinces, Selected Years,
1956 to 1966

	<u>1956</u>	<u>1958</u>	<u>1960</u>	<u>1962</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
	- cents per pound -						
Nova Scotia	15	14	13	15	15	15	17
Ontario	14	13	12	11	12	12	13
Alberta	16	23	19	19	14	16	16
British Columbia	<u>17</u>	<u>14</u>	<u>15</u>	<u>19</u>	<u>20</u>	<u>23</u>	<u>24</u>
Canada	14	13	12	12	13	13	14

From an examination of wholesale prices of cucumbers, it appears that they have followed the pattern of producer prices from 1963 to 1968. At Toronto, average prices for Ontario No. 1 Queens in the three months (April to June, inclusive) when Ontario greenhouse cucumbers are on the market in greatest quantity has increased in recent year, as follows:

	<u>Per carton of 24</u>	<u>Per Pound^(a)</u>
	\$	¢
1963	2.43	12.2
1964	2.59	13.0
1965	2.63	13.2
1966	2.97	14.9
1967	2.92	14.6
1968	3.38	16.9

(a) Converted at 10 pounds per dozen

At the public hearing the Chairman of the Ontario Marketing Board said that Ontario cucumbers were sold in all regions of Canada. This is reflected in price quotations published by the federal Department of Agriculture; in recent years prices for Ontario Greenhouse cucumbers have been quoted for markets from Halifax to Vancouver. As a result of wide distribution, Ontario cucumbers come into competition with greenhouse cucumbers produced locally in other provinces, particularly Nova Scotia, Alberta and British Columbia. The available evidence suggests that in the principal markets of the other producing provinces, Ontario cucumbers often tend to set a ceiling price for local produce.

In 1966 price quotations were reported at Halifax for both Ontario Queens and Ontario Kings in every week from the beginning of May until the end of July; throughout this period the prices quoted for the Ontario cucumbers were identical with those for Nova Scotia cucumbers of the same size; movements from Ontario into that market often are small. Similarly, at Edmonton, from April to early August of 1967 Alberta and Ontario Queens and Kings were quoted at identical prices for each size. Comparable price series are not available for the Vancouver market, because shipments to British Columbia are irregular and the nature of the British Columbia pack is different.

As the nearest major market to the Leamington growing area, which produces about 80 per cent of Canada's greenhouse cucumbers, Toronto tends to have the lowest wholesale prices for cucumbers of any major centre during the three-month period when the bulk of the Ontario greenhouse crop is being marketed. As table 46 indicates, prices tend to move upward as the distance from Toronto increases. The details of transportation rates and differences in transportation costs are discussed more fully in a section on transportation.

Table 46

Average Wholesale Prices for No. 1 Queen Cucumbers,
Selected Centres^(a), March to June, 1965, 1966 and 1967

	<u>Halifax</u>	<u>Montreal</u>	<u>Toronto</u>	<u>Winnipeg</u>	<u>Edmonton</u>
	-	dollars per carton of 24 No. 1 Queens			-
<u>1965</u>					
March	5.25	3.88	4.11	4.84 ^(b)	5.71
April	4.62	3.38	2.87	3.93 ^(b)	4.80
May	4.27	2.83	2.44	3.60 ^(b)	4.25
June	3.80	-	2.59	3.33	4.81
<u>1966</u>					
March	5.70	4.34	4.51	5.25 ^(b)	6.38
April	4.60	3.78	3.06	4.41 ^(b)	5.47
May	3.38	2.88	2.47	3.48	4.25
June	4.02	3.57	3.38	4.19	4.92
<u>1967</u>					
March	5.67	4.07	3.77	4.36 ^(b)	5.50 ^(c)
April	3.94	3.37	3.07	3.42 ^(b)	4.69
May	3.80	2.63	2.56	3.33	4.55
June	3.88	3.46	3.13	3.73	4.36

(a) Except as noted otherwise, at Montreal, Toronto and Winnipeg prices are for Ontario cucumbers; at Halifax prices are for Nova Scotia cucumbers; at Edmonton prices are for Alberta cucumbers

(b) Prince size

(c) Florida 24's

Source: Derived from Canada Dept. of Agriculture data

However, although prices increase regularly as the distance from Toronto (or Leamington) becomes greater, the increase in prices generally bears little relationship to the difference in cost of transportation. For example, in 1967 the cost of freight from Leamington to Halifax, by truck, was 59 cents more per carton than to Toronto, but prices of Nova Scotia greenhouse cucumbers were 87 cents more per carton in April and \$1.24 more in May, than in Toronto; the 1967 cost of freight from Leamington to Edmonton, by truck, was only 49 cents more per carton than to Toronto, but Ontario Queens were being sold in Edmonton at prices which ranged from \$1.23 to \$1.99 more per carton than in Toronto during the spring season. A similar situation existed in respect of other markets.

These differences are shown in table 48 together with the corresponding truck freight rate differences in 1967.

It is evident from table 47 that wholesale prices generally are much higher in the selected centres than in Toronto by much more than the additional cost of transportation to these centres. Whatever the reasons for these differences, it is apparent that Ontario greenhouse cucumbers can be sold in Prairie markets and in Montreal at

significantly higher prices than in Toronto after taking into account differences in freight costs. It is also probable that, if available, larger quantities of Ontario cucumbers could be sold in these markets than at present even without reducing prices right down to a Toronto plus freight basis.

Table 47

Margins Between Average Wholesale Prices in Toronto and
Selected Market Centres, No. 1 Queen Cucumbers,
By Month, March to June, 1965-67

	<u>Halifax</u>	<u>Montreal</u>	<u>Winnipeg</u>	<u>Edmonton</u>
	-	dollars per carton of 24 No. 1 Queens	-	-
<u>1965</u>				
March	1.14	-.23	.73(b)	1.60
April	1.75	.51	1.06(b)	1.93
May	1.83	.39	1.16(b)	1.81
June	1.21	-	.74(b)	2.22
<u>1966</u>				
March	1.19	-.17	.74	1.87
April	1.54	.72	1.35(b)	2.41
May	.91	.41	1.01	1.78
June	.64	.19	.81	1.54
<u>1967</u>				
March	1.90	.30	.59(b)	1.73(c)
April	.87	.30	.35(b)	1.62
May	1.24	.07	.77	1.99
June	.75	.33	.60	1.23

Difference in Freight Cost, Leamington to Selected
Centre Minus Leamington to Toronto(a)
- dollars per carton of 24 (20 pounds) -

1968 Spring	.59	.10	.35	.49
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(a) By truck

(b) Based on Prince size

(c) Based on Florida 24's

Source: Derived from table 46 and rates supplied by trucking companies

The principal source of imported cucumbers in April and May is Florida; other southern states such as South Carolina and North Carolina become more important sources of supply in June. Costs of transportation, by rail or truck, are lower from these areas to Toronto than to any other major Canadian market centre and, as a result, prices of imported cucumbers tend to be generally lower in Toronto and higher in cities east and west of Toronto. However, although the rates are higher to Montreal the differences, relative to Toronto, in several instances amount to less than five cents for a 20 pound carton, and therefore are not significant on a price per pound basis.

Because domestic greenhouse cucumbers supply such a large part of the domestic demand (about 85 per cent), price quotations for imported cucumbers are not regularly available for Canadian markets. Therefore, the data in table 48 apply to the months of November and December of 1967 and January of 1968 even though in these months no Canadian field or greenhouse cucumbers are available.

Table 48

Wholesale Prices of Florida Cucumbers, Cartons of 24,
At Selected Centres, November 1967 to January 1968

		<u>Montreal</u>	<u>Toronto</u>	<u>Winnipeg</u>	<u>Edmonton</u>	<u>Vancouver</u>
		- dollars per carton of 24 -				
1967	Nov.	2.31	1.91	2.63	3.89	4.83
	Dec.	2.22	2.16	2.76	3.73	4.80(a)
1968	Jan.	..	4.34	4.60	5.06	4.98
		<u>Difference in Price, Selected Centre Minus Toronto</u>				
		- dollars per carton of 24 -				
1967	Nov.	.40	-	.72	1.98	2.92
	Dec.	.06	-	.16	1.13	2.20
1968	Jan.	..	-	.26	.72	.64
		<u>Difference in Freight Cost from Florida to Selected Centre Minus Florida to Toronto(b)</u>				
		- dollars per carton of 24 (20 pounds) -				
1968	Jan.	.02	-	.35	.45	.45

(a) Florida 50 lb. basket converted to 20 lb.

(b) Based on truck rates from Palmetto, Florida

Source: Freight rates supplied by trucking companies; prices, Canada Dept. of Agriculture

As was evident for the Canadian produce in table 48, prices of the imported produce in cities west of the Great Lakes are higher than in Toronto by an amount which usually bears little relationship to the differences in freight costs.

The Ontario Greenhouse Marketing Board suggested that one of the benefits of the large volume of cucumber production by Ontario greenhouse growers was that prices to consumers in Canada were kept low when Ontario production was at a peak. In the words of a spokesman for the Marketing Board:

"The Board feels without this cucumber industry the f.o.b. price would be as high or higher in the months of April, May, or June as they are in January, February and March ... it would seem here we have a case that because of Canadian production it actually puts a rein or a halt on the prices if we were left entirely to imports alone." (Vol. 1, p. 37)

The available statistical evidence does indicate that prices of imported cucumbers tend to be lower in April, May and June than in the first three months of the year. This is reflected in unit value of imports (table 49) which, while not specific as to grades or markets, do reach a peak in February and then decline, the largest declines being in May and June. Other evidence to this effect is provided by wholesale prices for particular grades of cucumbers at Canadian markets.

Thus, the Marketing Board's observations regarding the price movements of imported cucumbers are correct but it is probable that the main determinant of the change is the growing volume of supply in the U.S.A. and the consequent decline in prices of cucumbers in U.S. markets. In the spring, when Canadian greenhouse cucumbers are being marketed, U.S. field grown cucumbers also are becoming available in increasing volume and a substantial decline regularly occurs in the price of cucumbers in the U.S.A. through the months of March, April, May and June (cf. table 50). In this period the production of greenhouse cucumbers in Canada is equivalent to about 15 per cent of the U.S. field crop and is not having any appreciable effect on U.S. prices. The decline in prices in the U.S.A. can be assumed to be the main determinant of the lower prices of cucumbers imported into Canada even though the Canadian greenhouse crop is supplying 85 per cent of Canada's market requirements through most of this period.

Table 49

Unit Value Per Pound of Cucumbers Imported Into Canada,
January to June, 1961 to 1968

<u>Year</u>	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>
			- cents	-		
1961	9.3	12.2	10.9	7.6	6.2	6.9
1962	8.8	10.3	9.4	7.5	8.0	5.0
1963	15.4	11.4	9.3	7.4	4.5	5.0
1964	11.0	17.9	18.7	8.6	5.9	5.5
1965	9.0	9.1	10.8	7.5	4.9	5.1
1966	9.4	12.9	10.4	9.0	6.7	7.3
1967	10.2	13.2	11.2	8.9	5.8	6.4
1968	9.6	14.9	12.0	12.2	7.0	5.6
Weighted Average 1961-68	10.1	12.3	10.8	8.4	6.0	5.9

Source: Derived from D.B.S., Trade of Canada, Imports

An authoritative U.S. publication reports that only 12 per cent of the U.S. annual supply of cucumbers is produced in the first three months of the year compared with 34 per cent of the annual supply in the second quarter. While this report was released more than ten years ago its contents are still relevant. The report also includes these remarks:

"Florida, the largest producing state for fresh market, ships during two seasons of the year with heavy supplies in October, November and December, and dwindling shipments January - March. The second and largest Florida crop starts in April and hits its peak in May. The big May harvest in Florida overlaps with shipments from other southern states and California. Florida shipments dwindle to practically nothing in June, when North and South Carolina take over the fresh market."

(Fruits and Vegetable Facts and Pointers:
Cucumbers; United Fresh Fruit and Vegetable
Association, Washington, D.C., p. 6)

Prices of cucumbers in the U.S.A. follow a seasonal pattern in which they rise in January and February and then decline. This pattern reflects the seasonal volume of production in the U.S.A.

Table 50

Average Prices of Cucumbers at Florida Shipping Points,
January to June, 1961-67

<u>Year</u>	<u>Late Fall Crop</u>		<u>Early Spring Crop</u> ^(a)			
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>
		-	U.S. dollars per cwt.		-	
1961	9.40	11.20	9.20	5.80	4.70	7.20
1962	7.90	8.10	9.20	10.60	8.20	6.20
1963	12.20	..	5.80	6.20	3.95	7.10
1964	10.70	..	8.90	5.60	5.30	5.60
1965	8.20	10.40	12.30	7.30	4.70	4.60
1966	8.90	11.20	..	6.70	6.00	6.80
1967	9.70	13.80	13.20	8.20	5.40	6.60

(a) The two crops may overlap in March and April

Source: U.S. Dept. of Agriculture, Statistical Bulletin No. 425

Prices of Canadian greenhouse cucumbers move seasonally from a high in March to a low in May and rise again in June. In March, April and May the pattern corresponds both to the seasonal change in Canadian production and to the seasonal change in U.S. prices. However in June, when supplies of imported cucumbers are declining, prices rise again even though Canadian production in June is probably larger than in May.

During the period when domestic greenhouse cucumbers are available Canadian production supplies about 85 per cent of the demand. However, as earlier discussions indicated, imports are of importance in many regions to supplement supplies of domestic cucumbers; Quebec is one of the major importing provinces.

In table 51, prices of Ontario greenhouse cucumbers are compared with those of field cucumbers imported from Florida. It is important to note that the prices per pound for the Florida cucumbers were derived from imports in bushel containers. Cucumbers of the same grade and size would be more expensive per pound if purchased in a carton of 24, the typical Canadian pack, than if purchased in a 50-pound bushel crate. As a result, small differences in price per pound between domestic and imported cucumbers are not significant.

Table 51

Wholesale Prices of Ontario Greenhouse and of Florida
Field Cucumbers, Montreal, March to June, 1965-67

		Ontario <u>No. 1 Queens</u> (a)	Florida <u>Selects</u> (b)	Margin, <u>Ont. Minus Fla.</u>
		-	cents per pound	-
<u>1965</u>	March	19.4	18.1	1.3
	April	16.9	13.9	3.0
	May	14.2	12.7	1.5
	June	-	11.5	-
<u>1966</u>	March	21.7	20.7	1.0
	April	18.9	12.0	6.9
	May	14.4	11.2	3.2
	June	17.9	14.4	3.5
<u>1967</u>	March	20.4	-	-
	April	16.9	12.9	4.0
	May	13.2	12.5	0.7
	June	17.3	12.7	4.6

(a) Cartons of 24

(b) Bushel baskets or crates

Source: Derived from data of the Canada Dept. of Agriculture

Table 51 shows that Canadian greenhouse cucumbers generally command a premium over the imported product. However, it is evident from the table that the premium is relatively small and variable. Commenting on the margin which greenhouse cucumbers enjoy over imported field cucumbers, the spokesman for the Ontario Marketing Board said, "It widens when the pressure of imports is less, and it narrows when the pressure is heavy". (Vol. 2, p. 184)

Analysis of Tomato Prices

As in the case of cucumbers, average returns received by growers of greenhouse tomatoes in Canada did not change to any appreciable extent in the ten years between 1956 and 1966. The stability of the national averages reflects the steadiness of prices in Ontario, the province of largest production. Of course, these averages do not show the changes in price during the season nor the variations from day to day and week to week. However, although such short term changes will affect the returns to growers, the seasonal averages reflect the returns to growers for a particular crop and show the probable differences from year to year.

Returns to growers are tabulated in table 52; only provinces with significant quantities of production are included in the table; these returns are for the spring and fall crops combined.

Table 52

Average Returns to Growers for Greenhouse Tomatoes,
by Province, Selected Years, 1956 to 1966

	<u>1956</u>	<u>1958</u>	<u>1960</u>	<u>1962</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>
	- cents per pound -						
Nova Scotia	34	33	30	30	29	29	28
Ontario	23	24	24	22	22	22	22
Alberta	29	29	27	26	26	27	26
British Columbia	21	20	19	22	25	26	25
Canada	21	22	22	22	23	23	22

Source: Derived from D.B.S. Cat. No. 22-202

Some indication of the difference in prices for spring and fall tomatoes is given in table 53. These data are weighted average returns to growers in Essex County, at the point of shipment. The average returns in tables 52 and 53 are understood to include packing and marketing charges which, as noted earlier, amounted to about 5 cents a pound in Ontario in 1968.

Table 53

Average Returns to Growers for Greenhouse Tomatoes,
Essex County, 1959 to 1968

<u>Year</u>	<u>Spring Crop</u>	<u>Fall Crop</u>
	- cents per pound -	
1959	30.0	18.2
1960	31.4	17.3
1961	25.6	14.9
1962	25.8	19.6
1963	22.4	18.7
1964	24.3	19.7
1965	23.3	17.9
1966	23.3	19.0
1967	28.9	19.0
1968 (Prelim.)	33.2	

Source: Essex County Associated Growers

Wholesale prices for greenhouse tomatoes have fluctuated from year to year, but have exhibited no marked trend in recent years. At Toronto, average prices of spring greenhouse tomatoes (No. 1 medium), wholesale to retail, have ranged between 27 and 32 cents in the 1963 to 1968 period. Over the same years, wholesale prices for the fall crop have ranged between 18 and 27 cents, for the same grade at the same location.

Table 54

Average Wholesale Prices, Ontario No. 1 Medium, Red,
Greenhouse Tomatoes, at Toronto, Spring and Fall Seasons,
1963-68

	<u>April to June</u>	<u>Oct. to Dec.</u>
	- cents per pound	-
1963	28	20
1964	30	23
1965	32	27
1966	31	19
1967	27	18
1968	32	..
Average		
1963-68	30	22

Source: Derived from data of Canada Dept. of Agriculture

As noted in the earlier section of the report dealing with regional consumption, imports account for most of the consumption of tomatoes in all provinces. Even Ontario depends upon imports for about three-quarters of its supplies in the spring and fall, and British Columbia, for two-thirds of its spring requirements and for more than 85 per cent of its fall requirements. The only really substantial interprovincial movement of greenhouse tomatoes is from Ontario to Quebec.

As a result of the importance of imports, Ontario greenhouse tomatoes cannot be expected to affect the pattern of prices of tomatoes in other regions to the same extent as Ontario greenhouse cucumbers affect cucumber prices. To the extent that prices of domestic greenhouse and imported field tomatoes are related, the imports are far more likely to establish the pattern of price movements because they account for such a very large proportion of the total supplies. However, although prices of Ontario greenhouse tomatoes are less likely to affect prices of tomatoes in other regions, and, in particular, the price of greenhouse tomatoes grown in other parts of Canada, the relatively large supply available in Ontario has resulted in generally lower prices for greenhouse tomatoes in that province than elsewhere in Canada. This is evident from table 55. Only a few centres are shown in the table because prices for greenhouse tomatoes are not quoted regularly in other markets.

Table 55

Average Wholesale Prices of Greenhouse Tomatoes^(a),
Selected Centres, April to June, 1965-68

	<u>Halifax</u>	<u>Montreal</u>	<u>Toronto</u>	<u>Vancouver</u>
	-	cents per pound, No. 1 medium, red	-	-
<u>1965</u>				
April	50	39	39	-
May	45	35	34	56
June	38	32	30	41
<u>1966</u>				
April	-	36	36	54
May	34	29	27	48
June	41	35	32	33
<u>1967</u>				
April	45	36	27	60
May	42	31	26	51
June	42	31	28	40
<u>1968</u>				
April	60	40	43	58
May	51	-	35	54
June	43	-	30	34

(a) Quotations at Montreal and Toronto are for Ontario tomatoes, at Halifax for Nova Scotia tomatoes, and at Vancouver for B.C. tomatoes

Source: Derived from Canada Dept. of Agriculture data

The relatively high prices in Vancouver and Halifax, in April, would apply to very small quantities because crops in these provinces reach maturity later than in Ontario. In Ontario, the laid-down cost of imported greenhouse tomatoes, to the extent they are offered in the market, would set a ceiling on prices of the Ontario product. On the Montreal market, greenhouse tomatoes from Ohio, principally pink varieties, command a premium over Ontario greenhouse tomatoes and this, of course, would affect the price of the Ontario product. Elsewhere, the price of whatever Canadian greenhouse tomatoes are offered is affected essentially only by the imported field tomatoes, over which the domestic greenhouse product commands a substantial premium.

As shown in table 56, prices of domestic greenhouse tomatoes in the fall follow a similar regional pattern as in the spring and for similar reasons. Prices are lowest in the Ontario markets and highest in Nova Scotia.

Table 56

Average Wholesale Prices of Greenhouse Tomatoes,
Selected Centres, October to December, 1965-67

	<u>Halifax</u>	<u>Montreal</u>	<u>Toronto</u>	<u>Vancouver</u>
	-	cents per pound, No. 1 medium, red	-	-
<u>1965</u>				
Oct.	37	30	25	24
Nov.	33	29	26	30
Dec.	44	30	31	38
<u>1966</u>				
Oct.	32	19	15	22
Nov.	34	28	20	28
Dec.	35	30	26	-
<u>1967</u>				
Oct.	-	-	18	-
Nov.	35	-	19	23
Dec.	37	-	17	-

Source: Derived from Canada Department of Agriculture data

Prices of imported tomatoes are available in a number of forms. The U.S. average prices, f.o.b. points of shipment, are shown in Appendix (1), the unit value of imports in table 57, and the wholesale prices of the imported products in Montreal and Toronto in table 58 (and in more detail in Appendix (1)). While the unit values of imports do not permit accurate price comparisons, they do illustrate two points. First, imported tomatoes seldom have had a unit value at point of shipment higher than twelve cents a pound in the spring and fall months in recent years. Second, although there has been no clear upward or downward trend in the price of tomatoes in the U.S.A. (see price series Appendix (1)), the unit values of imports are somewhat higher than in earlier years; this might reflect, at least in part, an increase in the proportion of vine ripers in the total.

During the spring season, the principal imports are vine ripe tomatoes from Mexico and tomatoes from Florida, most of which are mature greens. In October and November, the principal imports are of California mature greens; in late November and December most imports are of Florida mature greens.

Table 57

Unit Value of Imports of Fresh Tomatoes, by Month, 1961 to 1967

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	Weighted Average, <u>1961 - 1967</u>
	- cents per pound -						-	
<u>Months</u>								
Jan.	5.2	7.7	10.9	8.3	8.1	9.1	10.0	8.5
Feb.	6.3	6.4	10.0	9.3	7.5	10.3	8.9	8.4
Mar.	6.0	6.2	7.2	10.9	10.9	8.3	8.5	8.3
Apr.	6.2	5.3	5.9	10.9	11.9	10.9	9.3	8.6
May	6.3	7.8	8.4	9.6	12.2	9.7	9.8	9.1
June	7.2	8.8	9.3	11.2	9.8	10.5	11.3	9.7
July	12.2	11.7	10.5	11.5	11.2	12.6	14.0	12.0
Aug.	7.6	7.4	7.8	8.3	8.8	10.1	15.0	9.3
Sept.	6.2	5.3	4.9	5.6	7.7	6.8	7.1	6.2
Oct.	6.2	5.9	3.9	5.8	7.8	7.8	7.2	6.4
Nov.	8.3	8.3	9.7	9.5	11.4	9.7	7.5	9.2
Dec.	7.5	10.5	9.8	11.1	13.0	13.4	8.9	10.6

Source: Derived from D.B.S., Trade of Canada, Imports

The wholesale prices of the imported products are given in table 58 for Montreal and Toronto; large quantities of all kinds of tomatoes are sold on these markets and whatever competition exists is likely to be well represented by comparisons in these two cities.

Prices of domestic greenhouse tomatoes command a substantial premium over prices of imported field tomatoes. The premiums are larger in Montreal than in Toronto; they are larger in the spring than in the fall and they are larger relative to mature greens than vine ripers. The premiums are also very substantial compared with the wholesale price of the imported tomatoes; in Montreal, in the spring, for example, the premium is at times as much as 100 per cent, or more, of the wholesale price of the imported tomatoes. In addition to this margin at wholesale, the domestic growers benefit from the lower net transportation cost to the Montreal and Toronto markets and the duty on the imported product. The premiums in the wholesale prices are set out in table 59 in terms of the comparison of the Ontario greenhouse product with imported vine ripers and mature greens, in the spring of the year, and with mature greens in the fall.

Table 58

Wholesale Prices at Toronto and Montreal for Imported
Field Tomatoes of Specified Kinds, in Greenhouse
Marketing Seasons, 1965-68

<u>Toronto</u>				<u>Montreal</u>			
<u>Mexican Vine Ripes</u> ^(a)				<u>Mexican Vine Ripes</u> ^(a)			
April	May	June		April	May	June	
- cents per pound				-			
1965	24	27	21	22	25	19	
1966	22	18	18	20	18	-	
1967	19	17	26	20	17	21	
1968	32	25	18	29	23	18	

<u>Florida Mature Greens</u> ^(b)				<u>Florida Mature Greens</u> ^(b)			
April	May	June		April	May	June	
1965	20	20	14	20	17	15	
1966	14	14	16	16	15	17	
1967	16	15	21	-	14	17	
1968	30	23	22	18	16	15	

<u>California Mature Greens</u> ^(b)				<u>California Mature Greens</u> ^(b)			
Oct.	Nov.	Dec.		Oct.	Nov.	Dec.	
1965	16	22	20	15	16	13 ^(c)	
1966	16	21	21	15	19	20 ^(c)	
1967	13	14	15 ^(c)	13	12	13 ^(c)	

(a) In 30-lb. cartons, size 6 x 7

(b) In 40-lb. cartons, size 6 x 7

(c) Florida mature greens, in 40-pound cartons, size 6 x 7; prices for California tomatoes not quoted

Source: Derived from Canada Department of Agriculture data

In Montreal, an additional premium is paid for greenhouse pink varieties relative to greenhouse red tomatoes, and pinks from Ohio command a premium over pinks from Ontario. Dealers in Montreal informed the Board that individual growers in Ontario produce a pack which is equal to the best that is shipped from Ohio. However, they also said that the average pack of Ontario pink tomatoes is inferior to that from Ohio in respect of uniformity of size, maturity of the fruit and general appearance.

Table 59

Premiums Paid at Wholesale for Ontario Greenhouse Red Tomatoes
Relative to Principal Kinds of Imported Tomatoes, Toronto
and Montreal, Spring and Fall Seasons, 1965-68

	Toronto			Montreal		
	<u>April</u>	<u>May</u>	<u>June</u>	<u>April</u>	<u>May</u>	<u>June</u>
- premium for Ont. greenhouse vs. vine ripe, cents per pound -						
1965	15	7	9	17	10	13
1966	14	9	14	16	11	..
1967	8	9	2	16	14	10
1968	11	10	12	11	..	..
- premium for Ont. greenhouse vs. mature green, cents per pound -						
1965	19	14	16	19	18	17
1966	22	13	16	20	14	18
1967	11	11	7	..	17	14
1968	13	12	8	22	..	..
	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
- premium for Ont. greenhouse vs. mature green, cents per pound -						
1965	9	4	11	15	13	17
1966	-1	-1	5	4	9	10
1967	5	5	2	..	..	..

Source: Derived from Canada Department of Agriculture data

In the discussion of imports it was noted that, during the spring season, greenhouse tomatoes from Ohio outsell those from Ontario in the province of Quebec. These imports into Quebec from Ohio are currently more than three million pounds in the spring and nearly one million pounds in the fall of each year. Though they may be imported partly because they are considered to be superior to the Ontario product, it is probable that to some extent inadequate supplies of Ontario pinks are also an important factor in the importation of pinks from Ohio.

Table 60

Wholesale Prices of Ontario Red and Pink Greenhouse Tomatoes
and Ohio Pink Greenhouse Tomatoes, at Montreal,
Spring and Fall Seasons, Average, 1965-67

Average 1965-67	Ontario		Ohio Pink	Margin of Ohio Pink Over:	
	<u>Red</u>	<u>Pink</u>		<u>Ont. Red</u>	<u>Ont. Pink</u>
	- cents per pound		-	- cents per pound	
April	37	47	52	15	5
May	32	35	45	13	10
June	33	38	45	12	7
Oct.	24	32	36	12	4
Nov.	28	33	39	11	6
Dec.	30	36	42	12	6

Source: Derived from Canada Dept. of Agriculture data

As table 60 indicates, the premium for Ohio pinks over Ontario pinks is generally around five to seven cents a pound; in comparison with Ontario reds, the average premium has been from 12 to 15 cents a pound in the spring and from 11 to 12 cents a pound in the fall.

In the spring of 1967, Essex County produced 7.5 million pounds of tomatoes. For Essex growers to displace the substantial volume of Ohio pink tomatoes in the Quebec market would require an increase of nearly 50 per cent in spring production. At the current price differentials between Ontario reds and pinks, and allowing no additional premium such as is now enjoyed by Ohio pinks, the additional pink tomatoes would command prices 5 to 10 cents a pound higher than is now received for Ontario red tomatoes in the Montreal market.

Prices at Retail

It is evident from the foregoing discussion of costs, yields, returns to growers, marketing charges and transportation costs that the relationship between the return to the grower and the profitability of his operations can be followed through to the wholesale price for his produce, though the relationships throughout are by no means constant. The relationship can be extended to the retail level, having regard to the customary markups in the retail trade. Thus it is possible to get some very approximate idea of the minimum prices which consumers can expect to pay for greenhouse tomatoes if the grower is to sustain a profitable operation under various conditions.

It is also evident that to follow this relationship forward or backward is fraught with many uncertainties. No two situations are precisely the same and any illustration is likely to be unrepresentative of conditions at a particular time. Nevertheless, having in mind the many qualifications, an illustrative example of the price and cost relationships is useful.

In table 10 and the contingent narrative it was established that, under the cost and yield conditions hypothesized, a return to the grower of 17 cents a pound for spring tomatoes grown under glass would represent a "break-even" price in which the grower received payment for his labour and a return on investment but nothing additional by way of return for managerial or entrepreneurial services. Under plastic this "break-even" return was calculated to be 13.5 cents a pound.

Added to this net return of 17 cents a pound would be approximately 5 cents a pound packing and marketing charges and about one cent a pound transportation cost if the product was moved from Leamington to a wholesaler in Toronto. Thus, the laid-down cost to a wholesaler in Toronto would be 23 cents a pound. If the wholesale markup were 11 per cent on this landed cost, or about 2.5 cents a pound, the wholesale price would then become 25.5 cents a pound. If the retail markup were 40 per cent, it would add about 10.2 cents a pound. The consumer in Toronto could thus expect to pay approximately 36 cents a pound for Leamington greenhouse tomatoes, under these postulated conditions. Consumers buying in more distant markets will generally pay substantially more.

The price and cost progression, of the above example, may be summarized as follows:

	<u>cents per pound</u>
"Break-even" return to grower	17.0
Packing and marketing charges	5.0
Transportation to Toronto	<u>1.0</u>
Landed cost, Toronto	23.0
Wholesale markup (11%)	<u>2.5</u>
Wholesale price	25.5
Retail markup (40%)	<u>10.2</u>
Retail price	35.7

Thus, under the assumed conditions, a retail price in Toronto of about 36 cents a pound for spring tomatoes would be necessary to enable a grower in Leamington to cover his costs, including some personal return.

Retail prices are difficult to compile systematically and show greater variation than at other levels of trading. However, it is apparent from available data that retail prices of greenhouse tomatoes are frequently well in excess of the 36 cents a pound cited above; even wholesale prices at times exceed that figure. As noted above, wholesale prices in April, May and June in the Montreal and Toronto markets generally are in excess of 30 cents a pound, although in 1967 in Toronto, the wholesale price throughout that season, for No. 1 Medium, greenhouse red tomatoes averaged about 27 cents a pound. In Montreal, where Leamington pink tomatoes compete with those from Ohio, the wholesale price for the Ohio pinks averaged between 35 and 45 cents a pound in the spring of 1967. Prices in the spring of 1968 were generally much higher than in 1967. For example, in Toronto, wholesale prices of greenhouse tomatoes, No. 1 Medium, in 10 pound cartons, averaged from 30 to 43 cents a pound in the months of April, May and June, and, in Montreal, for No. 1 Large, from 37 to 46 cents a pound.

The circumstances at the consumer level are particularly complicated. Not only are prices different, sometimes substantially, from one store to another, and from day to day, but prices differ appreciably from one kind of tomato to another. Consumers in the same market area on the same day may be paying substantially different prices for tomatoes which are often distinctive in quality only as it is gauged by personal preferences. There may be many local and transitory reasons for these price differences, but between greenhouse and field tomatoes the basic factor which invariably establishes a substantial difference in price is essentially personal preference. So substantial is that price differential, as a rule, that the dealers and the consumers who came before the Board were agreed that the products were differentiated to such an extent that they were, in effect, serving two different markets, or two different groups of consumers.

In the spring, imported field grown tomatoes might be available in stores at prices ranging from 20 to 30 cents a pound and be in substantial demand; at the same time the same stores might be selling domestic greenhouse tomatoes, and possibly imported greenhouse tomatoes,

at twice these prices, or even higher. The quantities of greenhouse tomatoes sold at these prices are generally much smaller than of the imported produce but are, nevertheless, substantial. The consensus among dealers and consumers was that greenhouse tomatoes were, for the most part, much more in the nature of a luxury product. Thus, the substantial price differential at retail, while not of constant magnitude, is great enough to separate greenhouse tomatoes from direct association, in price, with the imported field grown product.

The Transportation Factor

In the earlier discussion on prices, reference was made to transportation costs as having an important bearing on tomato and cucumber prices, and particularly in comparisons of prices in one locality and another. Table 61 shows representative trucking rates for tomatoes from a number of shipping points to the main consuming centres in Canada. Rates for cucumbers, by truck, are generally somewhat lower per hundredweight largely because a greater weight of cucumbers can be packed into a truck. For rail transportation, when rates are quoted on a weight basis, the rates for tomatoes and cucumbers are generally the same; however, when a carload rate is being applied or when a car is rented the cost per pound will tend to be lower for cucumbers than for tomatoes for the reason noted above.

Table 61

Truck Freight Rates on Tomatoes from Leamington, Ontario,
and from Specified U.S. Points, to Specified
Destinations in Canada, September, 1968

FROM:	TO:					
	Halifax	Montreal	Toronto	Winnipeg	Edmonton	Vancouver
	-	-	Canadian	\$ per cwt.	-	-
Leamington	3.94	2.25	.75	3.50	4.00	5.00
Palmetto, Fla.	4.77	3.24	2.84	4.86	5.27	5.27
Nogales, Ariz.	6.19	4.65	4.20	3.60	3.60	3.60
Crow's Landing, Calif.	7.08	5.55	5.10	3.90	3.30	2.40

Source: Data provided by various trucking companies

The table indicates that Ontario greenhouse growers have a significant freight cost advantage over imports when supplying the principal consuming centres of Toronto and Montreal, as well as in shipments to Halifax; these differences are greater than the protection accorded by the customs duties. On the other hand, the Leamington growers are on almost equal terms, in freight costs, with shippers in Arizona and California in supplying the Winnipeg market. Shippers in Arizona and California gain the freight cost advantage to Edmonton and Vancouver (except in respect of competition with growers in Medicine Hat and the Vancouver/Victoria region).

The above examples are based on trucking rates because almost all domestically grown greenhouse tomatoes and cucumbers reach the markets by truck. To the extent that products are imported by rail at lower freight costs, the truck rate comparisons will overstate somewhat the advantage of the domestic grower. More detailed information on rates by truck and rail is given in Appendix (1). Rail transport continues to be very important in the shipment of imported products during the greenhouse season. Through the years, however, the trend has been for a greater proportion of the imports to be shipped by truck during the spring and fall greenhouse harvest seasons in Canada, as table 62 illustrates.

Table 62

Percentages of Imported and Domestic Tomatoes Unloaded
at Twelve Canadian Cities by Rail and Truck
in the Greenhouse Seasons, 1957 and 1967

<u>From</u>		<u>April to June</u>		<u>October to December</u>	
		<u>Truck</u>	<u>Rail</u>	<u>Truck</u>	<u>Rail</u>
Shipping Points in Canada	1957	85	15	100	0
	1967	99	1	99	1
Total Imports	1957	6	94	9	91
	1967	36	65	38	62
Florida	1957	6	94	6	94
	1967	30	70	54	46
California	1957	28	72	11	89
	1967	58	42	25	75
Mexico	1957	3	97	1	99
	1967	31	69	58	42

The increasing importance of trucking as a means of transporting these products is not a reflection of lower rates of transport for truck than for rail. The choice of mode of transport is influenced by many considerations, an important one of which, for perishable commodities, is delivery time. Other differences include the amount of handling involved, and any charges there may be for this, smoothness of travel by one mode or the other, ease and regularity of pick-up and delivery and the type of product being shipped. By and large it can be said that rail transport is almost invariably slower than truck transport. On the other hand, rail transport has some advantages for hauling larger quantities, at lower unit cost, than can be carried by a single truck trailer; this advantage is particularly important when an additional two to four days in transit is not an important consideration, a situation which might frequently exist when mature green tomatoes are being shipped.

On the other hand, vine ripe field tomatoes and greenhouse tomatoes must reach their destination as quickly as possible because they are almost ready for sale to consumers; they also must be exposed

to a minimum of jarring. Truck transport, therefore, is becoming the preferred method of shipment for vine ripens and, as table 62 shows, almost all of the domestic greenhouse tomatoes are already being shipped by truck.

Technological changes in recent years have been substantial in both modes of transport. These changes have been important in at least three respects: refrigeration and heating, size of loads and speed of delivery.

The importance of temperature control is apparent in relation not only to the nature of the products but also the times of year and temperature variations encountered by products travelling, for example, in March or November, from California, Florida or Mexico to Montreal, Winnipeg or Edmonton. Refrigeration by means of ice has been largely superseded by powered units which are built into each car or trailer and which provide either refrigeration or heating, as necessary. These units permit precise control of temperatures within the vehicle regardless of outside temperatures; the temperature also can be adjusted to the condition of the load to retard or advance its ripening en route to ensure that the product will reach the market at the correct stage of maturity and to take advantage of changes in the market.

The size of the individual transport unit has increased, both in rail and truck transport. According to the Board's information, the larger railroad cars are designed to carry as much as 140,000 pounds of produce, although loads of tomatoes or cucumbers seldom exceed 60,000 pounds. Truck trailers, in turn, can now carry loads of 40,000 pounds or more. However, as noted earlier for conversions of carloads to pounds, substantially smaller quantities were regarded as typical for both rail and truck transport. Truck trailers hauled by tractors can travel non-stop, except for refueling, at the maximum legal speed for thousands of miles by using two drivers; such vehicles provide sleeping space for the drivers.

Improvements in roads and in railway roadbeds in recent years have been an important factor in the opening of the U.S. and Canadian markets to Mexican produce. At a conference in 1967⁽¹⁾, it was reported that improvements in the roadbed and the dieselization of the rail system in Mexico had sharply reduced the time taken for produce to move the 700 miles from the Mexican growing area to the Nogales distribution point. For many years prior to the 1950's this trip took five to seven days; modernization in the 1950's cut the time to 40 hours, and in 1965 a piggyback train had cut the time to 15 hours. It was also noted that motor trucks now make the 700-mile trip in 18 hours. The piggyback service itself is an important development in getting the products to the market in an efficient manner. One railway flat-car usually carries two trailers, each with its own refrigeration unit.

Highways, roadbeds and equipment, of course, have also been improved in Canada, making it easier for greenhouse vegetables to reach distant markets. One trucking firm told the Board that its trucks delivered cucumbers from Leamington to Vancouver in less than four days.

(1) Proceedings of the International Conference on Handling Perishable Commodities, Purdue University, March 20-23, 1967

These developments in transportation have made possible the development of a market in Canada for vine ripe tomatoes from the southern United States and from Mexico. In contrast, as recently as 1957, the United Fresh Fruit and Vegetable Association, of Washington, D.C., U.S.A., in its Bulletin "Marketing Fresh Tomatoes", reported that, in the experience of one authority, "it is not practical to ship pink vine ripe or ripe fruits to distant markets." (p. 46)

The cost of transportation, moreover, may have some effect on the allocation of greenhouse space to either cucumbers or tomatoes. From information elsewhere in this report, it is apparent that a greenhouse grower, in general, can produce about two pounds of spring cucumbers at the same cost in the same space as he would produce one pound of tomatoes. Given this situation, a greenhouse operator would be indifferent as to which product he grew only in the event that he anticipated a return per pound of tomatoes about equal to the price of two pounds of cucumbers. If he expects his return per pound of spring tomatoes to be more than double that for cucumbers he could be expected to increase his tomato acreage; if he expects it to be less than double, he would tend to increase his acreage of cucumbers. The same ratio, however, does not apply to transportation costs. The cost of moving cucumbers and tomatoes by rail or truck is generally in terms of weight. In general, the cost of transporting a given weight of tomatoes will be roughly equal to that of transporting the same weight of cucumbers, and the cost of freight will thus be a smaller percentage of price of tomatoes than of cucumbers. This difference in transportation costs may not be significant in markets close to the growing area but the relatively higher transportation costs on cucumbers from distant, southern growing areas would tend to give the local growers additional protection on their cucumbers.

Tariff ConsiderationsThe Tariff Items and Their Application

Cucumbers, other than for processing, are entered under Tariff Item 8712-1 and tomatoes for fresh use under item 8724-1. Both items are reproduced below, along with the general descriptive heading relevant to these items.

<u>Tariff</u> <u>Item</u>		<u>B.P.</u>	<u>M.F.N.</u>
	Vegetables, fresh, in their natural state, the weight of the packages to be included in the weight for duty:		
8712-1	Cucumbers, n.o.p. per pound	Free	2 $\frac{1}{4}$ cts. or 10 p.c.

In any 12 month period ending 31st March, the specific duty shall not be maintained in force in excess of 22 weeks which may be divided into two separate periods, and the 10 per cent duty shall apply whenever the specific duty is not in effect.

8724-1	Tomatoes per pound	Free	Free or 1 $\frac{1}{2}$ cts. or 10 p.c.
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The Free rate shall apply during the months of January, February and March.

During the remaining months in any 12 month period ending 31st March, the specific duty shall not be maintained in force in excess of 32 weeks, and the 10 per cent duty shall apply whenever the specific duty is not in effect.

In the administration of these two items the specific duties may be applied not only seasonally, as is indicated above, but, under the authority of Section 13 of the Customs Tariff Act, they may also be applied for different periods of time in different regions. Section 13 is as follows.

"13. (1) The Minister may order that, in lieu of the ad valorem rate of duty or the free rate of duty, the specific duty provided for in tariff items 8701-1 to 8727-1 incl., 9201-1 to 9212-1 incl., 9401-1, 9402-1 and 9500-1 shall apply to goods described in the order imported through ports in a region or part of Canada during such period or periods as may be fixed by the Minister.

(2) If, before the coming into operation of an order under subsection (1), a person purchased goods for importation through a port in a region or part of Canada specified in the order, in the expectation in good faith that the ad valorem rate of duty or the free rate of duty would apply to the goods, and at the time of the coming into operation of the order the goods were in transit to the purchaser in Canada, the ad valorem rate of duty or the free rate of duty shall apply to the goods, notwithstanding the order."

In the administration of the two tariff items, in conjunction with Section 13 of the Customs Tariff Act, the specific rates have been applied, when, in the view of the responsible authorities, a substantial volume of Canadian produce is available; the specific rates are removed when the volume of marketings declines below some 'reasonable' level.

For purposes of application and removal of seasonal, specific duties, Canada is divided into three regions: the Atlantic Provinces (excluding Newfoundland in most years), Quebec and Ontario (actually ports of entry east of Port Arthur), and Western Canada (actually Port Arthur and ports of entry west thereof). In this part of the Report these regions will be referred to as the Atlantic Provinces, Central Canada and Western Canada, respectively.

It should be noted that the specific rate offers more protection than the ad valorem when the value of cucumbers is less than 22½ cents per pound, and when the value of tomatoes is less than 15 cents per pound.

Cucumbers

As was noted in a previous section, domestic production provides 85 per cent or more of Canadian supplies of cucumbers in the spring season. Of course, this production is of greenhouse cucumbers and the specific duty is applied in each region as greenhouse output, in that region, becomes appreciable. In general, specific duties on cucumbers are applied early in April in the Atlantic and Central Provinces and, in recent years, in late June in Western Canada. Similarly, dates of removal of the specific duty, in each region, are determined by the circumstances in the producing regions, and also vary in different regions and years. However, although dates of application relate to the greenhouse crop, dates of removal are with respect to the field crop. Dates of application and removal of the specific duty on cucumbers, in each region, are shown in table 63; the specific duty is applicable only to imports from countries which do not benefit by the British Preferential Tariff.

Table 63

Tariff Item 8712-1, Cucumbers, N.O.P., Dates of Application
and Removal of the Seasonal, M.F.N., Specific Duty,
by Region, 1959-68

Year	Atlantic Provinces ^(a)		Central Canada ^(b)		Western Canada ^(c)	
	On	Off	On	Off	On	Off
1959	April 15	Sept. 16	April 15	Sept. 16	May 21	Sept. 25
1960	May 18	Sept. 16	April 26	Aug. 26	May 27	Oct. 28
1961	May 27	Oct. 23	March 17	Sept. 2	April 12	Sept. 13
1962	May 30	Oct. 24	April 3	Sept. 4	April 3	Sept. 4
1963	April 26	Sept. 27	April 2	Sept. 3	April 2	Sept. 3
1964	April 3	Sept. 4	April 3	Sept. 4	April 3	Sept. 4
1965	April 2	Sept. 3	April 6	Sept. 7	June 24	Oct. 15
1966	April 21	Sept. 22	April 13	Sept. 14	July 5	Oct. 7
1967	April 13	Sept. 14	April 4	Sept. 5	June 30	Oct. 30
1968	April 9	Sept. 10	April 17	Sept. 18	June 20	Oct. 21

(a) Excludes Newfoundland except in 1959

(b) Actually entry ports east of Port Arthur, Ont.

(c) Actually Port Arthur and entry ports west thereof

Source: Department of National Revenue, Appraisers Bulletins

In 1959, the period during which the specific duty could be applied was extended from 12 to 22 weeks. Since then, the specific duty has been applied for the full 22-week period, in almost all years, in the Atlantic and Central Provinces. In Western Canada the 22-week period was used from 1960 to 1964, inclusive, but periods of 16 and 13 weeks were used in 1965 and 1966 respectively and 17 weeks, in 1967 and 1968

Thus, in general, the specific duty on cucumbers is applied in the Atlantic and Central Provinces around mid-April and is removed about mid-September. From mid-April until mid-July the specific duty protects the greenhouse crop and from mid-July until mid-September, the field crop.

Tomatoes

In sharp contrast to cucumbers, domestic production of tomatoes accounts for less than 20 per cent of Canadian consumption during the spring greenhouse season. The seasonal, specific duty on tomatoes is applied at about the time that the field-grown product is becoming available and therefore the effective dates of application are much later for tomatoes than for cucumbers. Dates of removal are also usually later for tomatoes. Dates of application and removal, by region, are shown in table 64.

Table 64

Tariff Item 8724-1, Tomatoes, Dates of Application
and Removal of Seasonal, M.F.N., Specific Duty,
by Region, 1959-68

	<u>Atlantic Provinces</u> ^(a)		<u>Central Canada</u> ^(b)		<u>Western Canada</u> ^(c)	
	<u>On</u>	<u>Off</u>	<u>On</u>	<u>Off</u>	<u>On</u>	<u>Off</u>
1959	- not applied	-	June 24	Dec. 7	June 13	Oct. 15
1960	Aug. 17	Oct. 14	June 25	Jan. 1/61	July 27	Oct. 28
1961	- not applied	-	July 6	Jan. 1/62	May 30	Nov. 9
1962	Aug. 4	Oct. 24	Aug. 2	Dec. 12	Aug. 1	Dec. 5
1963	Aug. 3	Oct. 19	- not applied	-	July 24	Nov. 15
1964	Sept. 5	Oct. 10	July 22	Oct. 13	July 22	Oct. 20
1965	- not applied	-	July 22	Oct. 20	July 9	Oct. 20
1966	- not applied	-	Aug. 4	Oct. 28	Aug. 5	Oct. 13
1967	Sept. 6	Oct. 23	July 18	Oct. 23	July 20	Oct. 23
1968	Sept. 6	Oct. 16	July 11	Nov. 19	Aug. 9	Oct. 21

(a) Excludes Newfoundland

(b) Actually entry ports east of Port Arthur, Ont.

(c) Actually Port Arthur and entry ports west thereof

Source: Dept. of National Revenue, Appraisers Bulletins

Dates of application and removal, and the periods during which the specific duty has been effective, have been far more variable, regionally and annually, for tomatoes than for cucumbers. In some, occasional seasons, when field crops have been delayed by cool weather or other circumstances, the specific duty has not been applied at all, most often in the Atlantic Provinces. Moreover, although the maximum period during which the specific duty may be applied is 32 weeks for tomatoes compared with 22 weeks for cucumbers, the maximum period during which the specific duty has been applied was 27 weeks, in 1960, in Central Canada. Since 1963 the longest period that the specific duty has been in effect in Central Canada was 14 weeks in 1967, and in Western Canada, 16 weeks in 1963. In the Atlantic Provinces the specific duty was in effect for 11 weeks in 1963, and between 1963 and 1967 was not applied at all in two years and was applied only for periods of 5 and 7 weeks in the other two years.

It is important to note that although the period during which the specific duties may be applied may be split into two parts for cucumbers, this has been done only once, in 1960-61, for Central Canada. It is also important to note that for cucumbers the specific duty is used to protect both the greenhouse and field crops but for tomatoes it is used to protect mainly the field crop.

The Tariff -- Cash Costs and Cash Benefits

It is axiomatic that to the extent that the duties on cucumbers and tomatoes enhance the prices of these products, consumers pay more than they otherwise would. As the price per unit of cucumbers and tomatoes increases, consumption of these products can be expected

to decrease and, therefore, the application of duties will reduce the quantities which would otherwise be consumed.

The benefit which producers of cucumbers and tomatoes derive from duties depends upon the extent to which the higher landed price of the imported products allows domestic production to replace imports or to be priced higher. Thus, the extent of benefit depends also on the degree to which the domestic products are directly competitive with the imports.

Cucumbers

For Canada as a whole, in the spring season, domestic production of greenhouse cucumbers currently supplies more than 85 per cent of the Canadian demand. Imports, apparently all field-grown, are a significant but not a large part of the supply nationally, although they constitute more than half the consumption in the Atlantic Provinces and Quebec. These two regions, together, accounted for 70 per cent of Canada's imports in the greenhouse season in the five-year period, 1963-67. Imports of cucumbers, therefore, are principally supplying particular regional markets which are not the prime markets of domestic greenhouse production.

Imported and domestic cucumbers appear to be in fairly direct competition with each other in terms of quality and consumer preference, although there is some evidence that the domestic product would ordinarily be preferred by consumers because it is greenhouse-grown. In the main, therefore, Canadian production has to be priced to compete directly with the imported produce. It is reasonable to assume that the effect of the tariff on cucumbers is to increase the unit return to producers and the prices to Canadian consumers, and to reduce the demand for them.

If duties on cucumbers were increased, the effect would be to raise prices to the Canadian consumers and unit returns to growers, and to reduce purchases of them. If prices of the Canadian product were raised by less than the increase in the duty, Canadian cucumbers would gain a competitive advantage over imported cucumbers and would displace some of the imports in the smaller market that would result from the higher prices.

The cost to the Canadian consumers of the existing duty on cucumbers is, at least, the amount of duty collected. In addition, to the extent that the price of the domestic product reflects the duty, there is an additional cost to the consumer who purchases the domestic product. Moreover, Canadian consumption of cucumbers would presumably be less at the higher price, with whatever disadvantage this entails. In the calculations which follow, only the cash cost of the existing duty on cucumbers is assigned as a cost; the only benefit to producers is assumed to be the product of the amount of duty per unit of sales and the producers' sales in Canada. This oversimplification of the economics of the situation almost certainly results in an underestimation of costs to consumers and probably an overestimation of benefits to producers. The other benefits, for example to the wholesale and retail trade and to tax revenues, are ignored in this account.

The underestimation of costs to the final consumer arises in part because the duty becomes incorporated into the cost of the product at each level of distribution. The markup of about 11 per cent at the wholesale level and the markup, possibly of about 30 per cent at the retail level, would apply to the duty as they do to any other cost. Thus, the specific duty of $2\frac{1}{4}$ cents per pound would become $2\frac{1}{2}$ cents after the wholesaler's markup and to the consumer it would be almost 3.25 cents after the retail markup. Of course, the markups benefit Canadian wholesale and retail dealers to the same extent as they are a cost to consumers of cucumbers, and the duty which is collected is part of the government's tax revenues.

The overestimation of benefits arises out of the assumption that those engaged in buying and selling Canadian cucumbers operate in the market with such skill that at every instant of time the full benefits of the duties levied are obtained in every market situation. Because it is highly improbable that this circumstance prevails, it is almost certain that the full benefits of the duties per unit of domestic sales are obtained only part of the time and, to the extent that the benefits per unit fall short of the full amount attainable, Canadian producers benefit to a lesser extent than is shown in the calculations.

Table 65

Cash Costs and Benefits of the Duty on Fresh Cucumbers,
by Region, March to June, 1962-67

Cash Costs of Duty in Thousand Dollars ^(a)						
	<u>Atlantic Provs.</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Prairie Provinces</u>	<u>British Columbia</u>	<u>Canada</u>
1962	15	85	334	35	31	507
1963	20	115	433	59	35	665
1964	32	153	411	53	49	696
1965	29	133	428	31	24	650
1966	34	107	519	41	31	732
1967	35	129	516	37	32	712

Cash Benefits of Duty in Thousand Dollars ^(b)						
1962	7	6	337	11	27	391
1963	6	8	499	22	30	555
1964	12	6	535	13	45	606
1965	11	2	527	8	21	563
1966	14	4	557	9	26	594
1967	14	5	615	8	25	605

(a) Costs are the product of the quantity or value sold (domestic plus imported) and the relevant rate of duty

(b) Benefits are the product of the quantity of domestic produce sold and the calculated rate of duty.

Source: Derived from data of the D.B.S and Canada and B.C. Departments of Agriculture

The calculations indicate that for Canada as a whole the costs of the tariff to consumers of cucumbers exceed the benefits to the growers, but not by very large amounts. The excess of costs over benefits, 1962-67, varied from \$87,000 in 1965 to \$137,000 in 1966. The large proportion that domestic cucumbers constitute of total consumption, March to June, ensures that Canadian producers will obtain most of the benefits derived from the higher costs of cucumbers to wholesale dealers; the difference would be largely the duties paid on the relatively small quantities of cucumbers imported during the spring season.

Regionally, however, the picture is quite different because costs are incurred according to the amount that is consumed while benefits accrue in relation to the amount that is produced. Ontario is by far the largest producer and consumer of cucumbers during the spring greenhouse season and, as a result, this province incurs the largest costs of and receives the largest benefits from the tariff on cucumbers. However, the benefits to Ontario generally exceed costs because the province produces more cucumbers than it consumes.

The largest part of the cost of the tariff relative to benefits is borne by regions whose production is small compared to their consumption. In this sense, Quebec, with an insignificant production of greenhouse cucumbers, bears the largest part of the cost of the tariff; significant parts of the total cost are also borne by the Prairie and Atlantic Provinces, particularly in relation to their populations. Moreover, because of their distance from both domestic and foreign sources of supply, the combined effect of the costs of transportation and tariffs undoubtedly contributes to the relatively lower consumption per person in these regions than in others, during the greenhouse season.

The estimated total cash cost of the duties on fresh cucumbers, during the spring season, in 1967 was about \$712,000 and the cash benefits about \$605,000. In 1967, there were approximately 160 greenhouse establishments in Canada which reported production of cucumbers. Thus, the average cash benefit would have been about \$4,000 per establishment in that year.

Tomatoes

The foregoing discussion of cucumbers would also apply generally to tomatoes. The tariff becomes incorporated in the costs at various levels of distribution and the enhanced costs result in some decrease in total consumption. The calculation of costs and benefits involve the same assumptions for tomatoes as for cucumbers. As for cucumbers, and for similar reasons, costs to consumers are almost certainly understated and benefits to producers overstated.

However, whereas domestic cucumbers supply a very large proportion of the domestic consumption during the greenhouse season, domestic tomatoes are less than 20 per cent of the consumption during the spring and fall greenhouse seasons. This results in very high cash costs to the Canadian consumers relative to the monetary benefits attainable by producers. As table 66 indicates, the cost of the tariff to the Canadian consumers, during the spring and fall greenhouse seasons, is currently about \$1.3 million annually; the maximum benefit obtainable by Canadian producers is approximately \$0.2 million; the difference, once more, represents the tax revenue from the duty.

If this assistance to the producer were provided by direct payments to producers, Canadian consumers would be expected to save more than one million dollars annually on their purchases of tomatoes. Most of this one million dollars is now collected as duties on imports. Thus the effect of the tariff has more of an element of a tax on food than of protection for growers of greenhouse tomatoes.

Table 66

Cash Costs and Benefits of the Duty on Tomatoes, by Region,
April to June and October to December, Combined, 1962-67

	Cash Costs of Duty in Thousand Dollars ^(a)					
	<u>Atlantic Provinces</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Prairie Provinces</u>	<u>British Columbia</u>	<u>Canada</u>
1962	55	363	321	167	104	1,012
1963	51	340	246	145	98	892
1964	60	461	335	193	115	1,174
1965	61	458	411	218	137	1,290
1966	71	407	436	210	150	1,281
1967	70	450	394	206	145	1,273

	Cash Benefits of Duty in Thousand Dollars ^(b)					
	<u>Atlantic Provinces</u>	<u>Quebec</u>	<u>Ontario</u>	<u>Prairie Provinces</u>	<u>British Columbia</u>	<u>Canada</u>
1962	3	1	94	2	23	126
1963	4	1	79	2	20	126
1964	7	1	127	2	26	180
1965	7	1	155	3	31	206
1966	10	1	175	3	33	226
1967	10	2	133	2	31	186

(a) Costs are the product of the quantity or value sold (domestic plus imported) and the relevant rate of duty

(b) Benefits are the product of the quantity of domestic produce sold and the calculated rate of duty

Source: Derived from data of the D.B.S. and Canada and B.C. Departments of Agriculture

As in the case of cucumbers, the costs and benefits of the tariff vary considerably from region to region. As table 66 indicates, Ontario producers receive between 60 and 80 per cent of the benefits, with British Columbia being the only other province whose producers receive significant benefits from the tariff on tomatoes. In contrast, while producers in Quebec and the Prairie Provinces receive negligible benefit from the tariff, consumers of tomatoes in these two regions appear to have incurred costs from the tariff of the order of \$650,000 annually in recent years. Even in Ontario, where producers benefit most from the tariff, the net cost to consumers (cost minus benefit) is currently about \$260,000 annually.

One other important distinction between cucumbers and tomatoes should also be kept in mind. Imported and domestically produced cucumbers are regarded in the market as very similar products and the domestic greenhouse product does not command a significant premium price. Hence, any increase in price of imported cucumbers, resulting from a higher duty, could be reflected directly in the price of the domestic greenhouse product. Imported tomatoes, on the other hand, are principally field-grown, and the market place differentiates significantly between them and the domestic greenhouse product. It is not clear that an increase in duty would necessarily be reflected directly in any substitution of domestic greenhouse for imported field tomatoes or in any enhancement of the price of the domestic product even though some fairly standard price differential usually exists. One important consideration for the greenhouse grower is to maintain or increase the product differentiation which the consumers accept between the greenhouse product and the imported field tomatoes.

Proposals and Representations

The principal proposal for an increase in rates of duties on tomatoes and cucumbers was made by the Ontario Greenhouse Vegetable Producers' Marketing Board, Leamington, Ontario (OGMB).

The Ontario Greenhouse Vegetable Producers' Marketing Board, representing certain greenhouse vegetable growers in Ontario, requested that the specific duty for tomatoes be increased from $1\frac{1}{2}$ cents to 5 cents per pound and be applicable in the months of April, May and June, for spring production, and October and November for fall production, and that on cucumbers the specific duty be increased from $2\frac{1}{4}$ cents per pound to $4\frac{1}{2}$ cents per pound and be applicable in the months of March, April, May and June. (Vol. 1, p. 15, 16)

A number of organizations either supported the proposal of the OGMB, or made other proposals which would increase the protection accorded the growers. These organizations were:

Ontario Farmers' Union, Local 374, Leamington, Ontario;
 Red Hat Cooperative Limited of Medicine Hat, Alberta;
 The Ontario Fruit and Vegetable Growers' Association,
 Toronto, Ontario;
 Greenhouse Growers, Nova Scotia;
 Maple Ridge Hothouse Growers' Association, Haney, B.C., and
 Vancouver Island Greenhouse Growers, Victoria, B.C.

In one way or another, a number of parties expressed opposition to the proposed increases in protection. These included:

Consumer's Association of Canada, Toronto;
 Ottawa Consumers' Protest Association, Ottawa;
 Quebec Wholesale Fruit and Vegetable Association, Montreal;
 Steinberg's Limited, Montreal, and
 The Government of Mexico.

In addition the H.J. Heinz Company of Canada Ltd., Leamington, Ontario, wrote to the Board prior to the hearing concerning tomatoes for processing (Vol. 3, p. 464). The company's interest, however, was not directly relevant to this Reference, and no further representations

were made on the matter. The Board did receive a letter from the Ontario Vegetable Growers' Marketing Board, Hamilton, Ontario, expressing opposition to the H.J. Heinz submission. (Vol. 1, p. 32A, 32B).

In total, therefore, of the twelve relevant submissions, seven favoured some increase in protection and five were opposed to it.

(A) Growers' Submissions

As noted, the main submission for the growers was that by the OGM.B. Before dealing with that submission, the supporting representations are outlined.

(1) The Ontario Farmers' Union, Local 374, Leamington, Ontario, in support of the case put forward by the Ontario Greenhouse Vegetable Producers' Marketing Board, in their letter to the Tariff Board stated:

"... we feel the Tariff Board should act favourably to Reference 140, 8712-1 and 8724-1 pertaining to greenhouse grown cucumbers and tomatoes and that the tariff on tomatoes should be increased from $1\frac{1}{2}$ cents to 5 cents per pound and for cukes from $2\frac{1}{4}$ cents to $4\frac{1}{2}$ cents per pound for the period requested by the greenhouse producers." (Vol. 1, p. 32)

(2) The Red Hat Cooperative Limited of Medicine Hat, Alberta, stated:

"Having been informed a week ago by our Department of Agriculture of the hearing to be held on Monday, April 1st, we regret that we do not have the opportunity to collect data in support of the brief presented by the Ontario Greenhouse Vegetable Producers Marketing Board. However, we have obtained a copy of this brief and agree in principle with the argument presented." (Vol. 1, p. 33)

(3) The Ontario Fruit and Vegetable Growers' Association, while supporting the greenhouse growers' proposal, stated in their telegram to the Tariff Board:

"Reference Tariff hearing No. 140, Ontario Fruit and Vegetable Growers' Association support greenhouse growers brief on the specific condition that if increase in tariff is warranted such increase does not effect present tariff rate or structure on any other horticultural products." (Vol. 1, p. 34)

(4) The Greenhouse Growers of Nova Scotia, supported the proposed increased tariffs on tomatoes and cucumbers, and, in a letter to the Tariff Board, stated:

"With regard to the Tariff Board Reference No. 140 Greenhouse Vegetables, we find ourselves in the same position as the other greenhouse production areas.

"... [We] endorse the brief of the Ontario Greenhouse Vegetable Producers' Marketing Board for an increase in the duty on tomatoes from $1\frac{1}{2}$ cents to 5 cents per pound and on cucumbers from $2\frac{1}{4}$ cents to $4\frac{1}{2}$ cents per pound for the period stated."

(Vol. 1, p. 103)

(5) In a letter to the Tariff Board, Maple Ridge Hothouse Growers' Association, Haney, British Columbia said:

"Regarding Tariff Board Reference No. 140, Greenhouse Production of Tomatoes, Cucumbers and other Vegetables ..., we do agree in principle with a telegram sent to you by the Ontario Greenhouse Vegetable Production Marketing Board and dated February 20, 1968.

"We would like to mention that most of our members are very interested in Dump Duties (also known by other names), the fast and efficient imposition of such duties at appropriate times ...".

(Vol. 2, p. 227)

(6) The Vancouver Island Greenhouse Growers agreed with the OGMB that the present rates of duties on imports of tomatoes and cucumbers in months other than January, February and March are too low and proposed a sliding scale of duties. Their proposal was explained in a letter signed by eighteen greenhouse operators in British Columbia, in part, as follows:

"The tariffs set out in 8724-1 and 8712-1 are in our opinion out-dated, and too low in our present day marketing. We have no objection to January, February and March duty free tariff in tomatoes, but a 10% duty or $1\frac{1}{2}\%$ per pound on tomatoes and 10% or $2\frac{1}{4}\%$ per pound on cucumbers thereafter are certainly too low if growers down south are dumping their surplus to keep their own market from being flooded. American tourists have mentioned on numerous occasions their American tomatoes are cheaper to buy in Canada than in California where they are grown.

"We feel a sliding scale of tariffs should be imposed on tomatoes and cucumbers in relation to our own market.

"Example: If our present market is \$5.00 per 20 pound case, and tomatoes are being offered at a dumping price of \$2.00 per 20 pound case, a 10% tariff only brings the price to \$2.20 or at $1\frac{1}{2}\%$ per pound it would be \$2.30. We feel this is unfair competition.

"We, the undersign submit that all imported tomatoes and cucumbers should be brought in at the same growers price on the current market. Example: If our present price of tomatoes is \$5.00 per 20 pound case, the tariff should be such as to put imported tomatoes and cucumbers on a fair competitive bases.

"We must ask your Board's kind consideration to keep in mind that our cost of production in greenhouse products are much higher compared to American tomatoes and cucumbers as they are field grown. Our costs are increasing yearly. In the past two years we have had to add Canadian Pensions and unemployment contribution to our rising costs of maintenance, fertilizer, cost of services and utilities. Also a minimum wage act is in effect this year."

(Vol. 2, p. 227-A)

It was not clear from the submission whether the reference to dumping was in the technical sense of products being sold abroad at less than their fair market values; no evidence was presented to make clear the nature or extent of the dumping situation to which reference was being made.

Arguments in Support of Higher Rates of Duty

The principal submission for increased protection came from the Ontario Greenhouse Vegetable Producers' Marketing Board, Leamington, and it was toward this submission that most of the opposition was directed.

The arguments put forward in support of the higher rates of duty may be summarized under the following headings.

(1) Increasing imports, with a special threat from Mexico

The submission of the Ontario Greenhouse Vegetable Producers' Marketing Board, stated:

"The greenhouse vegetable industry of Ontario which is a highly specialized and intensive type of agriculture providing high quality vegetables for Canadian consumers is going to be destroyed as an industry unless tariff protection is granted at certain times of the year against incoming vegetables. The competing vegetables are field grown tomatoes and cucumbers in Mexico, Florida, California and several other southern states. Because of climatic advantages, and in the case of Mexico cheap labour (about \$11.20 per week per worker), cheap land and cheap water for irrigation purposes, the Ontario greenhouse producer who has an investment of \$90,000.00 - \$100,000.00 per acre of greenhouse area is placed in a very precarious position."

(Vol. 1, p. 10)

The OGMB referred to the tremendous increase in Mexico's total exports of cucumbers and tomatoes in the ten years from 1957 to 1967 and the tremendous potential, in terms of the suitable land and the favourable climate which that country has, to expand production further.

The impact of the increasing volume of exports from Mexico to Canada was said to be apparent also in prices on the Canadian market. These imports, it was claimed, had a depressing effect on the prices received for Canadian greenhouse production.

"The fall greenhouse tomato crop of 1967 will go down in history as one of the most disastrous with the producers receiving approximately 13 cents per pound (after marketing costs) as imported tomatoes were shipped in costing 9 cents - 10 cents per pound in Toronto. These imported tomatoes were retailed at 19 cents per pound generally as long as Canadian production was available. However, the very important point in this presentation is to note that when the Ontario production was terminated and no Ontario competition was available against imports these 19 cent tomatoes in the retail store increased to 39 cents and 49 cents per pound." (Vol. 1, p. 11, 12)

Prices of fresh tomatoes and cucumbers are particularly sensitive to supply conditions because of the perishable nature of the products. The spokesman for the Ontario Greenhouse Marketing Board stated at the public hearing:

"I should point out, however, that we have a perishable product, it is a very fast moving industry, and there are many, many times when with the flow of imported produce we sometimes will change a price not once a week but up to twice a day.

"For example, last year in the month of June and the month of May with the rather warm weather and the flow not being in our control (I am talking of import control here) we had to adjust our prices very, very rapidly and almost day by day. I should point out also that we set a minimum price only." (Vol. 1, p. 51)

The effect of increased import competition was said to be more severe for tomatoes than for cucumbers, though lower prices were said to occur also for cucumbers. The principal concern from import competition was expressed in terms of the market in Ontario and Quebec though, as noted above, growers in other areas supported the proposed increase in rates of duty.

Commenting further on lower prices, a spokesman for the OGMB stated that:

"... because of increasing vegetable imports the prices received by the Ontario greenhouse producers for his product has actually declined from the 1950's and early 1960's, ... a decline from 31 cents per pound of tomatoes in the spring crop of 1960 to 23.3 cents per pound for the spring crop of 1965.

"Cucumbers also show a decline from \$1.31 per dozen in 1959 to a low of \$1.04 per dozen in 1961 and 1963." (Vol. 1, p. 10, 11)

(2) Differences in costs of production, domestic and foreign

Differences in production costs were cited as one of the main reasons for seeking increased protection on these products. Wage rates and land costs, in addition to climatic differences, were emphasized by the Ontario Greenhouse Vegetable Producers' Marketing Board.

According to the OGMB's information a field worker in Mexico was being paid about \$11.20 a week, compared with an average of \$1.50 an hour in the Leamington area. Land costs were cited as about \$40 an acre in some parts of Mexico, compared with \$1,200 an acre in the Leamington area.

A spokesman for the Marketing Board illustrated their concern in the following way.

"Because of climatic advantages, and in the case of Mexico cheap labour (about \$11.20 per week per worker), cheap land and cheap water for irrigation purposes, the Ontario greenhouse producer who has an investment of \$90,000.00 - \$100,000.00 per acre of greenhouse area is placed in a very precarious position." (Vol. 1, p. 10)

And later in the hearing, as follows:

"I am certainly not an expert on the areas of production in the south. I have visited some of them. There is no question, it appears to me, that there are some areas (and this would include Mexico), I understand, that where there is water available the conditions are such that this is one of the best areas of potential and future production which we have in North America. I might point out that they have another factor here which is very important in a time when costs are rising in other nations, and that is the cost of labour ... there is no question the area is developing rapidly and to a large extent with Mexican labour and, in some instances, with American capital. We also understand that the irrigation is being developed. Water is brought to the farm and we understand it costs about \$4.00 to irrigate. We understand the wage has been increased somewhat from a year ago, but apparently a man or a woman works for about \$2.25 a day. If we in Canada as growers could procure labour for \$2.25 a day, I am sure that these costs would be greatly reduced. There is no question they have many advantages over our greenhouse industry." (Vol. 2, p. 212, 213)

(The representative of the Government of Mexico submitted other information to indicate that labour costs in Mexico were not as low as cited in the above quotation. It seems reasonable to suppose, however, that even allowing for lower yields per acre for field crops than for greenhouse, labour costs would be significantly lower in some of the areas where Canada's imports of field produce originate.)

Some attempt was made by the spokesman for the OGMB to express these considerations in terms of the price of the product. For example:

"... the minimum cost of production [in the Leamington area] is 23 cents a pound for tomatoes and 5 cents a pound for cucumbers. Anything under that, the farmer is in fact losing money." (Vol. 1, p. 44)

The quoted cost of production of 5 cents a pound for cucumbers would be exceptionally low; a more representative cost would seem to be about 12 cents a pound.

While no similar break-even price was indicated for production in Mexico or the southern part of the U.S.A., prices of tomatoes much lower than 23 cents a pound were said to prevail at times in the market; for example, the average f.o.b. price for tomatoes imported into Canada in the years 1961 to 1967 was noted in the following statement:

"... the average for March 8.3 cents per pound, April 8.6 cents per pound, May 9.1 cents per pound and in June 9.7 cents per pound." (Vol. 1, p. 123)

With respect to prices of fall tomatoes in California, the spokesman had this comment.

"It just so happened that because of the higher price last June and July [1967] the growers in California increased their fall plantings so that they had a very heavy crop in the fall which was shipped into Canada and, as the brief points out, the laid in cost was often 9 cents or 10 cents a pound, which is a rather cheap tomato." (Vol. 1, p. 162)

The spokesman for the Marketing Board asserted that, given the conditions under which it operated, the greenhouse industry was efficient and attained high productivity.

"... in the spring if we are producing between 11 and 12 pounds per plant of tomatoes, this is what we consider today with the present research available to us to be a very good crop, and I might point out that the greenhouse industry in Ohio which is much older than ours and has very capable and experienced growers, that we are not lagging behind them in productivity ..." (Vol. 2, p. 196)

(3) The industry is faced with operating losses and no alternative use of its facilities

It was argued that because of the foreign competition the industry is operating at a loss. The average prices of its products were said to be declining or remaining the same while the cost of production was increasing. The industry had no alternative use for its facilities except to grow flowers.

Based on studies made in 1965 and 1966, the Marketing Board claimed the industry was operating at a loss.

"[Mr. G.A. Fisher] of the Farm Economics, Cooperatives and Statistics Branch of the Ontario Department of Agriculture and Food, ... conducted a cost of production study for the greenhouse industry in Essex County for 1965 and 1966 crop years. His study shows that in both years there was a loss in operating a greenhouse plant and the average loss for the two years was \$3,792.00 per acre of greenhouse area which represents an investment between \$90,000.00 to \$100,000.00 ... It should be pointed out that governmental agencies such as the Industrial Development Bank, the Farm Credit Corporation, and the Junior Farm Loan Board and the chartered banks had enough faith in the industry to advance fairly large sums of money for the expansion of this industry ... However, the lack of a change in policy re tariffs is now forcing the industry into a very difficult position as imports of field grown vegetables increase.

(Vol. 1, p. 11)

"The initial investment plus rising costs such as fuel, labour, taxes, fertilizer, insurance, hardware items, etc. makes it even more difficult."

(Vol. 1, p. 10)

These increases in costs were taking place when prices of the products were said to be declining.

The spokesman observed that the only alternative use of the greenhouses was to grow flowers; on this alternative, he had the following comment:

"... these greenhouse operations have no other possible alternate crops except possibly flowers. This flower market, however, is already virtually filled and it is therefore of utmost importance that the greenhouse vegetable grower be allowed to continue to grow vegetables in his present facilities."

(Vol. 1, p. 15)

(4) Transportation costs do not offer significant protection

Despite the fact that a long distance is involved for shipping tomatoes and cucumbers from Mexico and certain points in the United States, the spokesman for the Ontario Greenhouse Vegetable Producers' Marketing Board stated that the freight and refrigeration costs from the points of shipment to the points of

consumption did not provide significant protection to the Canadian greenhouse industry. Thus there was the need for the tariff protection. It was stated at the public hearing:

"The source is the Traffic Department of the Ontario Wholesalers Association in Toronto. I would also point out that the average freight on tomatoes out of Mexico is approximately 3.2 cents per pound, out of Florida it is slightly less." (Vol. 1, p. 124)

The transportation charge from Leamington to Toronto was said to be about one cent a pound.

(5) Protection offers indirect benefits

The submission of the Ontario Greenhouse Vegetable Producers' Marketing Board put forward the argument that the protection of the industry is essential not only to safeguard the investment in the industry itself but also to safeguard the other economic benefits this industry generates.

"The greenhouse vegetable industry of Ontario represents an income of \$7,000,000.00 for its 550 growers, and a total investment of approximately \$25,000,000.00. According to economists one dollar has a multiple factor of at least 5. Therefore, it is relevant that if the industry were destroyed the loss would be not only the \$25,000,000 investment but also the \$7,000,000 present income compounded several times." (Vol. 1, p. 15)

At another stage in the public hearing the spokesman for the same marketing Board explained as follows:

"Well, what I am saying here, or the brief goes on to say, is that if the industry is terminated it is not only the \$7 million as such: from the \$7 million from the products which the industry now buys is higher, so it would not be a straight loss of \$7 million: it would be a multiple effect on the economy of an area. For example, the thing which the industry would buy -- coal, labour, steel and so forth." (Vol. 2, p. 218, 219)

(B) Submissions by Consumers and Distributors

As noted above, five submissions were received which expressed opposition to the proposal by the growers for greater protection. The position of each of these parties is set out briefly below, followed by statements from the various submissions in support of the general proposition either that rates of duty should not be increased, or that the produce should be permitted entry free of duty.

(1) The Consumers' Association of Canada expressed its position in a number of ways during the course of the hearing. For example:

"We would like to petition for the removal of the 10% ad valorem duty on tomatoes and cucumbers."

(Vol. 3, p. 390)

And again:

"The Consumers' Association of Canada feels that the present 10% ad valorem duty on tomatoes and cucumbers should be investigated to establish whether it does provide a necessary protection for the Canadian industry or whether it has become in fact merely a hidden tax on food in certain sections of Canada.

"In addition we would recommend a more equitable method of application for the existing specific tariffs and are opposed to any increase above their present level."

(Vol. 3, p. 392)

And further:

"We are hopeful that the duty adjustments arising out of this enquiry will be those which will protect the Greenhouse Industry if it is efficient and then only against the unfair competition of a distress price on imported produce.

"It is also hoped that the Board's recommendations will remove from consumers the equally unfair burden of taxation on the imported products, especially during periods, or in areas, where our Domestic Industry cannot supply the market."

(Vol. 3, p. 393)

(2) The Ottawa Consumers' Protest Association presented a brief which it had prepared and was presenting on behalf of the National Consumers' Protest Association. The submission, in summary, was:

"With due regard to the particular difficulties of Canadian greenhouse growers, we believe that a proper solution to this kind of difficulty falls outside the purview of the Tariff Board and outside the scope of the Reference No. 140.

"We, therefore, propose that those rates under Tariff Item 8712-1 and Tariff Item 8724-1 be reduced to free entry."

(Vol. 3, p. 418)

(3) The Quebec Wholesale Fruit and Vegetable Association opposed any change in the present tariff structure for imports of tomatoes and cucumbers, stating in its submission:

"that the wording and the rates of duty of tariff items 8712-1 and 8724-1 should not be changed in any manner whatsoever;

"that any newly proposed tariff item changes which are related to the subject matter of this reference should be refused."

(Vol. 2, p. 247, 248)

(4) Steinberg's Limited, a retail food chain operating principally in the Montreal area and parts of Quebec and Ontario, opposed any increase in import duties on tomatoes and cucumbers. The company stated in its submission:

"we do not believe that the present proposals before this Board are in the short or long-term interest of consumers, and as such they cannot be in the long-term interests of Canadian producers as well.

"... It is because we are in favour of a strong domestic industry wherever possible, and in policies which favour adjustments in agriculture in the direction of greater productivity to the consumers' benefit that we have made our submission. If the best way to do this is to subsidize Canadian producers in some manner, then we agree let it be done, but let us not do it in a way which magnifies interference in our marketing system, which may discourage the search for innovation and cost reduction, and which discourages Canadian consumption of tomatoes and cucumbers ..."

(Vol. 2, p. 298, 299)

(5) The Government of Mexico proposed that there be no change in the wording of items and rates of duty pertaining to the tomatoes and cucumbers within the scope of Reference 140.

"... we hereby officially request your kind acceptance of our proposal concerning the rates of duty of tariff items Nos. 8712-1 and 8724-1 for which, in view of the present circumstances, we propose that they remain, in their wording and in their applicable duties, as they have been in the past and that they are now." (Vol. 3, p. 337, 338)

Arguments in Support of Above Proposals

The arguments in opposition to an increase in rates of duty for tomatoes and cucumbers may be summarized, in a very general way, under the following headings.

(1) The adverse effect of higher rates of duty on the consumer

As might be expected, much of the opposition to higher rates of duty was directed toward the effect on prices which the consumer would have to pay not only for the imported product but for the product grown domestically in greenhouses. A number of the submissions and spokesmen noted that this added cost would be imposed at a time of the year when no domestic produce was available from natural environmental cultivation. Some of the statements made in this respect are given below.

The Ottawa Consumers' Protest Association, for example, noted:

"Not only would a tariff put the entire burden on consumers by forcing some to pay higher prices if they want the product at all, and others to forego it entirely, (both these vegetables would be missed because they add colour, vitamins, taste and variety to winter menus) but the burden bears no necessary relation to the subsidy it affords growers. Thus its effects are uncertain. Its impact, however, would be just like a tax on food ..."

(Vol. 3, p. 425)

"... a tariff has the same inequities as a sales tax has on consumers generally."

(Vol. 3, p. 445)

The spokesman for the Quebec Wholesale Fruit and Vegetable Association noted, concerning the proposed increase in duty:

"... $3\frac{1}{2}$ cents a pound is going to be reflected somewhere, I don't care who says not. In as much as the production of greenhouse tomatoes is such a small percentage of the total consumption in Canada, the great masses of consumers are going to have to pay."

(Vol. 1, p. 136)

"... the great majority of the population enjoys the benefit of buying field-grown produce at lower market prices and should not be penalized because of the Ontario Hot House Growers. Their product is purchased by the more affluent segment of the population who wish to buy high-priced glass grown produce ..."

(Vol. 2, p. 249)

The spokesman for Steinberg's Limited stated in this connection:

"Increases in the tariff level will ultimately be borne by consumers. I don't think there is any doubt about that, and avoidance of this new charge on the part of consumers will have its strongest effect where the potentialities for market growth are the greatest, at the lower income level, and it is precisely at this level where the importance to diet of such product is least appreciated."

(Vol. 2, p. 299)

In assessing the effect on consumers of increasing the tariff by $3\frac{1}{2}$ cents a pound on imported tomatoes, the spokesman for Steinberg's Limited stated:

"If it happened as a matter of course the margin $\sqrt{\text{gross}}$ markup at retail were $33\frac{1}{3}$ per cent, then the $3\frac{1}{2}$ cents at the buying level would be translated to 5 cents at the retail level."

(Vol. 2, p. 330)

The spokesman for Steinberg's also noted that the cost to the consumer could be disproportionately large relative to the benefit to the producer. During the peak production period, domestic greenhouse tomatoes might be supplying only 14 per cent of market requirements and the increase in price at the retail

level, resulting from an increase in duty of $3\frac{1}{2}$ cents a pound, might be 5 cents a pound.

"This means then that for every 100 pounds I sell to the consumer her cost is increased by \$5.00, all this to give the greenhouse grower 70 cents --".
(Vol. 2, p. 319)

The 70 cent benefit to the grower was later revised by the spokesman to 49 cents. (Vol. 3, p. 337)

(2) The inappropriateness of tariff protection for the greenhouse industry

Partly because of the relatively small part of the market for tomatoes which the greenhouse industry supplies and partly because costs of production were represented as being so much higher than those for growing the field crops, several spokesmen expressed the view that tariff protection was inappropriate to the greenhouse industry. Some of the comments noted above also bear upon this point, but the discussion ranged over a broader scope.

The Consumers' Protest Association, for example, stated:

"... we firmly believe that tariff protection would be an inappropriate, ineffective, and unjust remedy for the situation. It would be inappropriate in the light of the Government's long-term economic policies, it would be ineffective and clumsy in its failure to remedy the basic difficulty, and it would be unjust and inequitable in its distribution of the burden of maintaining the growers and their families on what would amount to merely a disguised form of public relief."
(Vol. 3, p. 420)

Moreover, the submission went on, "it is not in Canada's advantage to devote resources to growing tomatoes and cucumbers in the Canadian winter." (Vol. 3, p. 422).

The Association also suggested that the cost was not represented simply by a comparison of prices, but that the Canadian public pays additionally by foregoing more productive opportunities. Any special treatment accorded the growers "should be designed to hasten rather than retard the flow of resources out of the industry so that the need for assistance will diminish over time." (Vol. 4, p. 424). Those growers who do survive will know it is because their efforts are based on an honest market preference. The Association further argued that the tariff is a very insecure umbrella and the higher it is raised the more risks there are that if it is later removed substantial losses in capital will take place, particularly because one of the results of the higher tariff might very well be to attract additional capital into the industry. In this regard, one spokesman for the Association suggested that capital investment might be expected to increase until costs again rose to reflect fully the higher level of the tariff. (Vol. 3, p. 433).

The Consumers' Association argued that a tariff was particularly inappropriate in some regions and that consumers in the prairie region, the Atlantic Provinces and, to a lesser extent, British Columbia could be adversely affected by the tariff without any offsetting benefit of any consequence to the growers of greenhouse produce in Canada and, therefore, "it is questionable whether there is a need for a duty on imports into any of the Western provinces." (Vol. 3, p. 393).

(3) Canada's international interests could be adversely affected

The representative of the Government of Mexico emphasized that tomatoes and cucumbers are one of the main exports of Mexico to Canada. Any increase in duty on these imports, it was argued, would have an adverse affect on the overall trade of the two countries, with far reaching consequences to the growers of these vegetables in Mexico and that it would be in conflict with a statement by Canada's Minister of Trade and Commerce to the Second United Nations Conference of Trade and Development in New Delhi early in 1968.

The Quebec Wholesale Fruit and Vegetable Association and the Consumers' Association of Canada drew attention to Canada's participation in the Kennedy Round and to the benefits and responsibilities arising therefrom. The Quebec Wholesale Fruit and Vegetable Association noted that rates of duty on other vegetables coming into Canada had been reduced, whereas those for tomatoes and cucumbers had not.

The Consumers' Association was concerned with broader implications of the negotiations, in the following way:

"... the Kennedy Round cuts should be made to show up in consumer prices. It is only in this way that the Agreement will have a direct effect on the average Canadian.

"The Canadian tariff reductions were made in exchange for concessions made by foreign governments. Canada cannot expect to receive the advantages of reductions in other countries' trade barriers if she turns around a few months later and grants protection piecemeal to any who find it difficult to compete with imports." (Vol. 3, p. 391)

Much the same argument was put forward by the Consumers' Protest Association.

The submission by Steinberg's Limited drew attention to the possibility of retaliation by other countries.

"It does not appear wise to risk the retaliation which is likely to follow any measure changing the status-quo in the direction of greater barriers."

(Vol. 2, p. 297)

(4) Greenhouse and field-grown products are differentiated in the market place

A number of the representations which opposed a higher rate of duty argued that the imported field-grown product, particularly tomatoes, did not compete as the same product with the greenhouse product and that, therefore, no great emphasis should be placed on the fact that it sold at a lower price. It was argued that because the greenhouse product was more in the nature of a luxury item, the quantity which the growers were supplying could be sold at a favourable price even though the volume of imported field-grown produce, at a lower price, was increasing to meet a growing, more utilitarian type of consumption.

The spokesman for Steinberg's stated the matter in this way.

"I think it might be most helpful to think of the market situation in terms of a schedule of demand curves ... You have a demand and a supply for a product which is labelled 'greenhouse', 'hothouse tomatoes'. You have a scheduled demand which relates to the vine-ripened Florida tomatoes, field ... there are at least two different kinds of markets. These markets are independent and at the same time they are interconnected. The degree to which supply and demand factors vary within the separate markets causes adjustments in the differentials between these markets. The greenhouse product has been able to retain a price premium." (Vol. 2, p. 301)

And another spokesman for the same company:

"... I don't compare a greenhouse tomato with any field tomato. It is in a different category by itself." (Vol. 2, p. 312)

He noted that they were in different displays, separated and separately featured from the field product.

The difference in price appeared to be the main determinant of product differentiation. Apart from varietal distinctions, differences in shape, colour, size, condition or nutritional content do not appear to exercise a significant influence, and there was no agreement that flavour imparted a clear advantage to one type of product over the other.

(5) Transportation and other charges offer protection

Some of the parties opposing higher rates of duty argued that the imported product faced transportation and related charges which, in effect, protected the domestic grower in supplying the main market areas in Ontario and Quebec. In addition the lower exchange value of the Canadian dollar, in recent years, was cited as an additional factor favourable to the domestic grower. Comparisons of transportation rates have been made elsewhere in this report; the impact of some of the related factors was noted, for

example, in a statement by the spokesman for the Quebec Wholesale Fruit and Vegetable Association:

"The big factor there [differences in transportation charges for reasons other than distance] would be the premium on United States funds ... and then, of course, there is refrigeration that would vary from the various points ... when you are transporting something from the interior of Mexico you are dealing with a matter of 3,500 miles through hot climates and refrigeration can be expensive. The other expensive item is the demurrage charges, retention charges for mechanical [refrigeration] cars ... Where demurrage and retention used to be about \$6.00 a day for the old type of car conveyance, it now starts at \$10.00 a day and goes to \$30.00 a day after four days ... it is not unusual to have a bill for \$120 or \$150 just for keeping a car on hand ..."

(Vol. 2, p. 271)

The spokesman for the Quebec Wholesale Fruit and Vegetable Association also drew attention to the fact that freight costs had increased substantially in recent years and that the method of setting rates had changed; as a result there had been, proportionately, a greater increase in freight costs on imported produce than on domestic. "... cost of freight on imported vegetables have been more significantly increased." (Vol. 2, p. 250).

(7) Marketing problems

Steinberg's Limited expressed the view that some of the difficulties faced by the growers of greenhouse tomatoes and cucumbers might be overcome by better organization and liaison in marketing their produce. The company spokesman noted:

"... in our opinion, the producer organization could possibly do better in terms of ensuring its members a more favourable return for their product if they were to use the proceeds of their levies to create in the consumer's mind a perception relative to value and confidence and trust as to their specific product ... If they have a valuable product, they should not hide their light under a bushel ..."

(Vol. 2, p. 305)

And with respect to a recent re-organization of marketing arrangements, the spokesman added:

"The producers' group has a new board, and it is likely in such circumstances that initially, before relationships are built up, that there is some lack of sufficient communication to minimize market disturbances. There also may be possibly some belligerency towards the trade because, obviously, the creation of such a board is a reaction to an existing situation ... In this situation communication is probably not as good as it should be, and frankness is not as good as it should be, and there is less cooperation than is likely to occur after we get to know each other a little bit better."

(Vol. 2, p. 315)

In this regard the spokesman for Steinberg's also noted that the outlets had to plan well in advance, and it was essential to them to know the quantity and the price of produce which they could count on receiving. Communications in this matter, he noted, had not always been adequate to serve effectively the growers and the trade:

"... we had a discontinuity of supply, the product was being cut from day to day, and it was difficult for us to clearly know whether the supplies would be available at a specific price so that we could make our arrangements for merchandising to the consumer. It is in this area that I think there are opportunities for eliminating some of the disturbances to the benefit, I think, of the producer as well as to our benefit."

(Vol. 2, p. 316)

Analysis of Proposals

Under the existing administration, the specific duty on cucumbers of $2\frac{1}{4}$ cents per pound has been applied, in Central Canada, commencing either in the first or second week of April. By the proposal of the Ontario producers the specific duty would apply at the beginning of March, five to six weeks earlier than is usual, and would be $4\frac{1}{2}$ cents a pound. The specific duty is now applied when the responsible authorities consider that there is some reasonable volume of domestic greenhouse cucumbers available to supply the demand. Thus, under present administration, the greenhouse growers, themselves, could have the date of application of the specific duty moved forward to the beginning of March by adjusting the timing of their crops so as to achieve a significant volume of production earlier in the season. However, it should be noted that the specific rate is now applied for the full 22-week period allowed for in the Tariff.

If the specific duty were to be applied on March 1, without any consideration for the availability of domestic supplies, Canadian consumers would be asked to pay more because of the higher specific duty at a time of year when foreign supplies are small and when only a very small quantity of domestic greenhouse cucumbers are coming on to the market. During March, the specific equivalent of the existing ad valorem duty of 10 p.c. rarely approaches even 2 cents a pound and therefore the proposed $4\frac{1}{2}$ cent specific duty, in that month, would be equivalent to an increase of about 3 cents a pound.

The ad valorem equivalent of the existing and proposed specific duties for the months March to June inclusive are given in table 67, for imports from Mexico and the U.S.A., the only significant countries of origin. The proposal to double the specific rate would bring the protection generally up to, or considerably in excess of, an ad valorem equivalent of 40 per cent.

Table 67

Cucumbers: Ad Valorem Equivalent of Specific Duties of
 $2\frac{1}{4}\%$ and $4\frac{1}{2}\%$ per pound on Imports from Mexico
 and the U.S.A., March to June, 1967

1967	Unit Value of Imports		Ad Valorem Equivalent of:			
			$2\frac{1}{4}\%$ per lb.		$4\frac{1}{2}\%$ per lb.	
	Mexico	U.S.A.	Mexico	U.S.A.	Mexico	U.S.A.
	¢ per lb.		per cent		per cent	
March	10.6	17.0	21.2 ^(a)	13.2 ^(a)	42.5	26.5
April	9.0	9.3	25.0	24.2	50.0	48.4
May	6.8	5.6	33.1	40.2	66.2	80.4
June	-	6.4	-	35.2	-	70.3
March to June	9.7	6.6	23.2	34.1	46.4	68.2

(a) In March, the ad valorem duty of 10 p.c. was in effect

Source: Derived from D.B.S. data

For tomatoes, the producers' proposal that a specific duty of five cents a pound should apply in April, May and June is a considerable departure from current practice. At present, the specific duty on tomatoes is used to protect only the crop of field tomatoes and in recent years has not been in effect in any part of Canada before July or August. Moreover, the producers' proposal that the same specific duty should apply in October and November would tend to keep the specific rate in effect for five or six weeks longer than has been the case in recent years. To have the specific rate apply through April to November, inclusive, would require an increase in the allowable number of weeks from 32 to 35 weeks.

At present, the duty on imported tomatoes is 10 p.c. in April, May and June. In this period, the unit value of imports from Mexico and the U.S.A., the only suppliers of significance, has varied from about 8 to 15 cents a pound. Accordingly, the 10 p.c. duty amounts to approximately $\frac{1}{4}$ cent to $1\frac{1}{2}$ cents a pound in these months. The ad valorem equivalent of the producers' proposal, therefore, would result in a very substantial increase in these months, and would result in an ad valorem equivalence of about the same order of magnitude as noted above for cucumbers. The ad valorem equivalent of the producers' proposals for tomatoes is shown in table 68, for the relevant months of 1967.

Table 68

Tomatoes: Ad Valorem Equivalent of Proposed Specific Duty of
5 Cents a Pound on Imports from Mexico and the U.S.A.,
April to June and October to December, 1967

<u>1967</u>	<u>Unit Value of Imports</u>		<u>Ad Valorem Equivalent of 5 Cents Per Pound</u>	
	<u>Mexico</u>	<u>U.S.A.</u>	<u>Mexico</u>	<u>U.S.A.</u>
	¢ per lb.		per cent	
April	8.8	11.3	56.8	44.2
May	8.9	11.3	56.2	44.2
June	9.2	12.7	54.4	39.4
April to June	8.9	11.9	56.2	42.0
October	24.2	7.2	20.7	69.4
November	-	7.5	-	66.7
December	12.9	8.7	38.8	57.5
Oct. to Dec.	12.9	7.8	38.8	64.1

Source: Derived from D.B.S. data

As noted earlier, proposals of most other producers' associations were in support of those of the Ontario Marketing Board. The submission of the Vancouver Island Greenhouse Growers appears to envisage a scheme whereby the duty on imported produce would be the difference between the market price of domestic greenhouse produce and that of imported products. However, the proposal is not entirely clear, nor is it clear how the Growers envisage that the "sliding scale of tariffs", would be administered. The Vancouver Island Greenhouse Growers did not appear before the Board to clarify their proposals nor did they support their recommendations apart from making some general reference to rising costs. There are obvious difficulties in assessing the proposal in the form in which it was presented.

Those who opposed the proposals of the Ontario Marketing Board proposed either that the existing tariff situation regarding cucumbers and tomatoes for fresh use should be unchanged or that these products should be entered free of duty during the seasons of the year when domestic field-grown cucumbers and tomatoes are not available, a period roughly covered by the months of October to June, inclusive.

Analysis of Representations

The support of the Ontario Marketing Board for their proposed increase in rates of duty rested on three principal points. Firstly, the spokesman for the Ontario Board argued that increasing imports of cucumbers and tomatoes, particularly from Mexico, depressed prices of greenhouse products; secondly, he claimed that with rising costs of production greenhouse growers could not operate profitably in competition with the lower-priced imports; and thirdly, he said that imports from Mexico were likely to continue to increase very substantially in the near future and aggravate the above situation.

Those who opposed the proposals of the producers claimed that any increase in duties would be reflected in higher prices to consumers for both domestic and imported products; they pointed to the rapid growth of the greenhouse industry and questioned its claims of unprofitable operation and need for assistance; they said that increased tariff protection would be ineffective in remedying the basic difficulties of the industry and an inappropriate means of assisting it, and they expressed concern regarding the adverse effects on Canada's international trade relations if the producers' proposals were implemented.

A number of other claims are also dealt with, usually indirectly, in the following.

Because cucumbers and tomatoes are involved in different market situations, they are discussed separately.

Cucumbers

Cucumbers and tomatoes, together, account for about 98 per cent of the value of sales of all greenhouse vegetables produced annually in Canada. Cucumbers, alone, account for approximately 46 per cent of annual sales of all greenhouse vegetables and 55 per cent of greenhouse vegetable sales in the spring season. In 1967, the value of sales of cucumbers exceeded that of spring tomatoes by about \$282,000 or 7 per cent. The value of sales of domestic greenhouse cucumbers has risen from \$2.4 million in 1962 to \$4.2 million in 1967, an increase of 75 per cent during these five years. About 160 greenhouses reported production of cucumbers in 1966 and 1967.

Ontario is the principal producing area for greenhouse cucumbers, with sales valued at \$3.6 million, more than 80 per cent of Canadian sales; British Columbia, with about 12 per cent of sales (\$518,000 in 1966), is the only other province with a significant volume of production. The value of sales of all other areas combined is about \$200,000, per year. The area around Leamington, in Essex County, accounts for 98 per cent of Ontario's sales of greenhouse cucumbers and for more than 80 per cent of Canadian sales. It is, therefore, by far the largest concentration of greenhouse cucumber production in Canada.

Canada currently consumes about 38 million pounds of cucumbers, during the spring greenhouse season, more than 85 per cent of which are domestic greenhouse cucumbers; all identifiable imports are of field-grown cucumbers which originate mainly in southern parts of the U.S.A. but with significant amounts also originating in Mexico; other imports are from the Caribbean area. Between 1963 and 1967, average imports in the greenhouse season from all countries were 5.8 million pounds valued at \$413,000.

There appears to have been no marked trend in imports of cucumbers during the spring greenhouse seasons of the past 12 years (1956 to 1967). If anything, average annual imports appear to have declined through the past decade both in quantity and in value, although the average unit value is somewhat higher in more recent years. The situation is, of course, contrary to the more restricted comparisons made by the growers at the public hearing, which generally dealt with a shorter period of time.

Table 69

Imports of Cucumbers, March to June
Five-Year Averages, 1958-62 and 1963-67

	'000 lb.	\$'000	¢ per lb.
1958-62	6,522	428	6.56
1963-67	5,795	413	7.13
% change	-11.1	-3.5	+8.7

Source: Derived from D.B.S. data

Although total imports of cucumbers, March to June, appear to have declined slightly in recent years, imports from Mexico have increased substantially, from less than 75,000 pounds in most years prior to 1963 to more than one million pounds in 1967, representing about 22 per cent of total imports. The increase in imports from Mexico has been accompanied by an even greater decrease of imports from the U.S.A. which, however, continued to account for about 70 per cent of the total in 1967.

Imports from Mexico do not appear to pose any particular threat to Canadian producers. As indicated by the above data and in the earlier, more detailed discussion of imports, the principal impact of imports from Mexico has been to displace those from the U.S.A. in the Canadian market. Moreover, Mexico's penetration of the Canadian market has occurred mainly in British Columbia, the Prairies and Quebec, that is, in regions a considerable distance from the principal market area for the Essex County product. In Ontario, which provides a market for more than 70 per cent of the greenhouse cucumbers grown in Canada, imports of cucumbers have declined substantially during the past decade; practically all imports into Ontario come from the U.S.A.

During the period from 1957 to 1967, Canadian consumption of cucumbers in the spring greenhouse season increased from 18.4 million to 37.5 million pounds. With imports remaining relatively stable at about six million pounds per year, the additional supplies have come from the expansion of Canadian greenhouse production by 21 million pounds, mainly in the Leamington area. Imported cucumbers, which accounted for nearly 40 per cent of Canadian consumption in the late fifties, currently supply less than 20 per cent of the total. This change could not have occurred unless the profitability of cucumber production had provided the inducement for Canadian greenhouse operators to treble their output, from 11.5 million pounds in 1957 to 33.3 million pounds in 1967.

An additional factor which enters into consideration is that Canada currently exports nearly two million pounds of greenhouse cucumbers annually to the U.S.A. Thus, Canada's net imports of cucumbers (imports less exports) are only about four million pounds per year, the equivalent of about 15 acres of greenhouse space. Exports from Canada to the U.S.A. have been increasing in recent years. Most exports are from the Leamington area but significant amounts are also exported from British Columbia. These exports are dutiable at 3 cents a pound when entered into the U.S.A.

Although imports of cucumbers have not increased for several years and have become a much smaller part of Canadian consumption, they continue to exert a strong influence on Canadian prices. As noted earlier, the U.S.A. continues to be the major source of supply for imports. Thus imports from the U.S.A. exert by far the greatest external influence on Canadian prices. This is likely to be particularly true in Quebec which imports more than half the Canadian total; more than 80 per cent of imports into Quebec during the spring greenhouse season originate in the U.S.A., mainly in the southern parts of Florida.

In the months of March to June, shipments from Florida to Montreal would be in trucks or railway cars equipped both to heat and refrigerate their contents during the long journey. The cost of transportation from Florida to Montreal, in temperature-controlled railway cars, was 2.43 cents a pound in 1968. The comparable rail rate from Nogales, Arizona, for imports from Mexico, was 2.81 cents per pound. The comparable rail rate from Leamington to Montreal was 1.18 cents a pound and the truck rate, which is more relevant, was 2.25 cents a pound.

In addition to the cost of transportation, imports of cucumbers were subject to the existing M.F.N. duty of 10 p.c. in March. In part of April and all of May and June, they were subject to the existing specific duty of 2½ cents a pound. For the purposes of the calculations which follow it is assumed that the specific duty was in effect during all of April; in fact, in 1967, it came into effect on April 4. The heading "net freight" is the cost of freight from the point of origin of the imports to Montreal, less the cost of rail freight from Leamington to Montreal; in effect, it is the freight cost advantage to Leamington producers were they to ship by rail. In fact, to gain other advantages they typically ship by truck, an alternative also open to shippers from the U.S.A. and Mexico.

Table 70

Protection Afforded by Costs of Transportation and the
Existing Tariff on Imports of Cucumbers from the
U.S.A. and Mexico to Quebec, March to June, 1967

	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>
	-	cents per pound	-	
<u>Imports from the U.S.A.</u>				
Duty	2.34	2.25	2.25	2.25
Net freight (a)	1.25	1.25	1.25	1.25
Total	3.59	3.50	3.50	3.50
<u>Imports from Mexico</u>				
Duty	0.77	2.25	2.25	2.25
Net freight (a)	1.63	1.63	1.63	1.63
Total	2.40	3.88	3.88	3.88
<u>Ad valorem equivalent of duty and net freight</u>		per cent ad valorem		
U.S.A. imports	15.4	43.3	64.7	60.8
Mexico imports	31.3	41.2	64.6	- (b)

(a) Rail freight cost from foreign origin less rail freight cost from Leamington to Montreal

(b) No imports were reported from Mexico in the month of June

Source: Derived from D.B.S. and other data

Moreover, domestic greenhouse cucumbers enjoy some preference in the market and almost invariably command a small premium price over field-grown. In April, May and June, 1967, in Montreal, Ontario No. 1 Queens, at wholesale, averaged respectively 4 cents, 1 cent and 4 cents, more per pound than Florida Selects. With about three cents advantage from the tariff and freight costs and the premium price, greenhouse cucumbers can be laid down in Montreal at prices that may be seven cents a pound higher than those for imported field-grown cucumbers.

The spokesman for the Ontario Marketing Board referred to the price margin between greenhouse and field-grown cucumbers saying, "It widens when the pressure of imports is less, and it narrows when the pressure is heavy". (Vol. 2, p. 184).

The representative of the Ontario Marketing Board claimed that:

"because of increasing vegetable imports the prices received by Ontario greenhouse producers for his product has actually declined from the 1950's and early 1960's ...

"Cucumbers ... show a decline from \$1.31 per dozen in 1959 to a low of \$1.04 per dozen in 1961 and 1963".
(Vol. 1, p. 10, 11)

Prices in the years since 1963 have generally been higher than in that year.

A comparison of the unit values of imports with average returns, f.o.b. Leamington, indicates that for the period from 1958 to 1961 there was little relationship between them and suggests that factors other than the price of imports also had an important influence on prices received by growers in Canada. For example, the unit value of imports was higher in 1961 than in 1959 and much higher than in 1958 yet the return for greenhouse cucumbers, at Leamington, was substantially lower in 1961 than in either 1958 or 1959. However, in the six-year period, from 1962 to 1967, the unit values of imports and returns to growers tended to move up and down in somewhat greater correspondence than in earlier years and the margin between the two stayed within fairly narrow limits.

Table 71

Cucumbers: Unit Value of Imports Compared with Returns to
Producers, f.o.b. Leamington, March to June, 1958-67

<u>Year</u>	<u>Unit Value of Imports</u>	<u>Price f.o.b. Leamington</u> - cents per pound	<u>Margin, Leamington Less Unit Value of Imports</u> -
1958	5.6	13.1	7.5
1959	7.0	13.1	6.1
1960	6.4	11.9	5.5
1961	7.5	10.4	2.9
1962	6.6	10.7	4.1
1963	6.1	10.4	4.3
1964	7.2	11.8	4.6
1965	6.6	11.8	5.2
1966	7.9	13.0	5.1
1967	7.6	11.8	4.2

Source: Derived from D.B.S., Trade of Canada, Imports and data published by Essex County Associated Growers

The differences between the returns at Leamington and the unit values of imports for the years 1962-67 vary between approximately four and five cents a pound.

The threat of existing and potential competition from Mexican imports was cited many times during the public hearing and considerable emphasis was placed on the lower rates of pay received by Mexican field laborers and the cheapness of land and water in that country. These points do not require detailed investigation and presentation here. Moreover, the fact, for example, that laborers are paid at lower rates in Mexico than in Canada does not, of itself, establish that labor costs per unit of production are less in Mexico than in Canada. For example an average output of cucumbers per acre in a greenhouse in Canada would be between 120 to 140 tons; in Mexico the yield per acre for the field crop would be of the order of 20 tons. At the present time, moreover, as in earlier years, Florida is by far the largest supplier of imported cucumbers to the Canadian market. However, it was not claimed, nor is it probable, that costs of labor used for the production of field produce in Florida are less than for greenhouse production in Canada, although it is generally accepted that, in total, the costs of producing field vegetables are generally less than the costs of producing vegetables in greenhouses, especially in parts of the world which enjoy natural advantages, particularly at certain seasons of the year. The proposal by the growers, in effect, was that the rate of duty should be sufficiently high to cover the additional cost of creating an artificial environment in which vegetables can be grown.

As was noted earlier in this section and was discussed in detail in other sections, there is no evidence that imports are a threat to Canadian producers of greenhouse cucumbers. It is true that imports from Mexico have risen in recent years but this has occurred as a result of the displacement of U.S. cucumbers in the Canadian market, particularly in those parts of Canada which are distant from Canadian sources of supply. In spite of a very rapid growth of Canadian consumption total imports have actually declined slightly in the past decade. If foreign suppliers had retained a share of the Canadian market such as they had ten years ago, Canada would be importing about 13 million pounds of cucumbers annually in the greenhouse season, more than double the current level. It would seem, therefore, that greenhouse cucumbers are being produced in Canada very competitively in terms of supplies from abroad.

Also, as noted earlier, Canadian greenhouse operators not only have been competing with imported cucumbers but they have been competing in the U.S. market. During the spring greenhouse season, Canadian production of greenhouse cucumbers is equivalent to about 15 per cent of the production of field-grown cucumbers in the U.S.A. Thus, Canadian exports could have some small effect on U.S. prices but, in effect, Canadian growers must accept for their exports the going price in the U.S. market, making due allowance for the U.S. duty on their product going into that market and for the exchange value of the currency.

Because U.S. supplies are so large, Canadian producers must set their prices in Canada so as to avoid attracting a large volume of imports from the U.S.A. To the extent that the landed cost of imported cucumbers determine the price for the greenhouse product,

Canadian consumers pay more because of the duty not just for imported cucumbers but also for domestic greenhouse cucumbers. The earlier calculations indicated that, in 1967, the total direct cash cost of the tariff was \$712,000 and the total direct cash benefit was \$605,000. At that time there were approximately 160 greenhouse establishments which reported production of cucumbers; thus the average benefit, or subsidy, would have been approximately \$4,000 per establishment. The direct cost of the tariff, principally as reflected in the price of domestic product, was borne largely by Ontario consumers (about 70 per cent of the total) but in Quebec, where greenhouse producers benefited to the extent of only \$5,100, the cash cost at wholesale was \$129,000 for the imported and domestic cucumbers consumed in that province.

Tomatoes

In 1967, the value of sales of spring and fall greenhouse tomatoes, together, was approximately five million dollars, slightly more than one-half the total value of sales of all greenhouse vegetables. The spring tomato crop accounts for about 70 per cent of the value of sales of all greenhouse tomatoes produced in the year, partly because of the larger production and partly because spring tomatoes bring a significantly higher return per pound than fall tomatoes.

Total production of Canadian greenhouse tomatoes rose from 13.4 million pounds in 1962 to 19.9 million pounds in 1967, an increase of 49 per cent in this five-year period. Production of spring tomatoes rose by 52 per cent and of fall tomatoes by 44 per cent during this period. In 1967, the value of sales of spring tomatoes was approximately \$3.9 million with sales of fall tomatoes valued at \$1.4 million.

Spring greenhouse tomatoes are grown mainly in Ontario (approximately two-thirds of the total) and in British Columbia (about 26 per cent); most of the remainder is produced in Nova Scotia. The production of fall tomatoes is even more concentrated in Ontario, which accounts for 88 per cent of the Canadian total. The Leamington area of Ontario is the location of the major concentration of greenhouse tomato production in Canada. This area accounts for almost 60 per cent of the spring production and more than 80 per cent of the fall production. Taking both crops together, Leamington growers account for about two-thirds of Canadian output of greenhouse tomatoes.

In 1967, Canada consumed about 80 million pounds of tomatoes in the spring (April to June) and nearly 49 million pounds in the fall (October to December). Fall consumption in 1967 was over eight million pounds greater than it had been in the two preceding years but this increase probably is not indicative of a continuing change of that magnitude. Some of the following comparisons, therefore, relate to the period, 1957-66, to avoid any distortion that the figures for the fall of 1967 introduce.

Canadian consumption of tomatoes has risen sharply in the past decade, from 89 million pounds in 1957 to 118 million pounds in 1966, an increase of 29 million pounds, or nearly one-third. About 55 per cent of the increase, 16 million pounds, occurred between 1957 and 1961, inclusive. As far as can be determined from incomplete data for the earlier years, about two-thirds of the increase of 12 million pounds in consumption from 1962 to 1966 was in the spring season.

As noted earlier, in sharp contrast to the situation regarding cucumbers, imports of tomatoes supply more than 80 per cent of the market in the spring and fall greenhouse seasons, though this share is considerably lower than a decade ago when imports supplied over 90 per cent of the market in those seasons. Imports originate almost entirely in the U.S.A. and Mexico and are much larger in the spring than in the fall. Imports in the spring were relatively stable from 1959 to 1965, at about 60 million pounds, but increased to 63.7 million pounds in 1966 and 67.5 million pounds valued at \$6.8 million, in 1967. In the same period, fall imports varied more from year to year and averaged about 34 million pounds, annually. Unusually large foreign supplies were available at low prices in 1967, and imports rose to 42.5 million pounds, valued at \$3.3 million. Imports from Mexico are significant only in the spring and they now account for about 61 per cent of the total imports in that season compared with only 31 per cent in 1957; their displacement of tomatoes from the U.S.A. has occurred mainly in May and June. In the fall, the U.S.A. is the only supplier of significance with from 94 to 99 per cent of the total.

Imports do not appear to have inhibited the growth of the Canadian greenhouse industry. In the ten-year period (1958-67) and using the five year averages, 1958-62 and 1963-67, to avoid distortions of individual years, production has almost doubled while imports have increased by less than ten per cent. Moreover, although domestic production was only 10 per cent of consumption in 1958-62, it accounted for 55 per cent of the increase in consumption between that period and 1963-67.

Looking at the changes seasonally within the 1962-67 period, production in the spring increased 52 per cent from 1962 to 1967, imports only 10 per cent. Comparisons for the fall season from 1962 to 1967 reflect the unusually high imports in the latter year; these changes are shown here in brackets after the changes from 1962 to 1966. In this latter comparison, production increased 53 per cent (43 per cent) and imports only six per cent (35 per cent).

At the least, it is very difficult to reconcile these changes with the claims that imports have been exerting an adverse effect on producers of greenhouse tomatoes; it is equally difficult to equate production increases of the order of 40 to 50 per cent in a five or six year period with an industry in which it is claimed that profitability is low and declining.

In many respects the greenhouse industry is not comparable with many other agricultural enterprises. For example, additional output cannot be readily achieved by the use of more fertilizer or much more intensive cultivation. Some increases are achieved from time to time by using new varieties or improved methods of operation but the principal method of achieving increases in production now is by increasing greenhouse space; such increases can only be made by substantial investments in land, buildings and equipment. If no increase in yields occurred, the increase of 4.4 million pounds in the production of spring tomatoes, 1962-67, for example, would have required an additional 34 acres of greenhouse space even assuming an average yield of 12 pounds per plant. If the additional acreage were half plastic and half glass it would have represented an investment of \$2.3 million.

The increase in spring tomato production, 1962-67, was accompanied by an increase of 12.7 million pounds in the production of cucumbers, in the spring. This would have required the addition of another 47 acres of greenhouse space (assuming a yield of 30 cucumbers per plant). On the same basis as above, this additional space could have been built and equipped at a total cost of approximately three million dollars.

From the foregoing and based on yields that only efficient operators would be expected to obtain, the increase of production in the spring (tomatoes and cucumbers) represents an addition of at least 80 acres of greenhouse space and an investment in plant and equipment of around \$5.7 million. The actual acreage increase appears to have been substantially greater. It is unlikely, if the industry was being seriously threatened by imports and profits were small and declining, that growers would have been interested in, and could have attracted, an investment of this magnitude in the six years, 1962-67. Investment in greenhouse property would require particularly close scrutiny because a greenhouse has no alternative use and the investment is intended for a relatively long term.

All Canadian provinces depend heavily on imports for out-of-season supplies of tomatoes and the distribution of imports, regionally, is generally according to population. This dependence is modified to some extent by local production, but even in Ontario, by far the largest producer, imports are between 70 and 80 per cent of consumption in the spring, while the Prairies import around 98 per cent of their supplies in that season. The situation is generally similar in the fall. Thus, as noted in an earlier section, the distribution of costs and benefits varies considerably from one region to another.

The nature of the competition is very different for greenhouse tomatoes than for greenhouse cucumbers principally because of the greater product differentiation by consumers when buying tomatoes than when buying cucumbers. Whereas the premium in price which greenhouse cucumbers command, at wholesale, for example in Montreal, seldom exceeds five cents a pound, the premium for spring greenhouse tomatoes over imported field tomatoes in the same market averages from 10 to 22 cents a pound for red varieties and 13 to 32 cents a pound for pink varieties. These premiums are very substantial when compared with unit values of imports of about 10 to 12 cents a pound over these years. Moreover, in addition to the premiums, the Ontario growers, as noted earlier, have a significant advantage in transportation costs to the principal markets of Toronto and Montreal.

With the usual retail markups applied, Ontario greenhouse red tomatoes, both in the spring and fall, typically sell for about twice the price at retail of the imported produce. For example, in the spring, when the Ontario tomatoes are selling for about 47 cents a pound in Montreal, Mexican vine ripers might retail at 25 cents a pound, and, in the fall, when Ontario greenhouse red tomatoes are commanding a price of 36 or 37 cents a pound, Florida and California mature greens might retail at Montreal at 19 or 20 cents a pound. The magnitude of the premiums suggests that there is only a limited substitution of imported field grown tomatoes for domestic greenhouse, at least as long as the fairly traditional price spreads are not greatly exceeded.

Because their price is much higher, it is reasonable to expect greenhouse tomatoes to be bought in much smaller quantities than field-grown tomatoes; in 1967, roughly four to six times as many field-grown as greenhouse tomatoes were consumed in the spring and fall seasons.

Reference was made by the growers to the unusually large volume of low-priced imports which were entered in the fall of 1967 and to their disastrous effect on prices of Ontario greenhouse tomatoes. As noted previously, fall imports are almost entirely from the U.S.A. and 1967 was no exception; 98.6 per cent of the total imports came from that country. Imports from the U.S.A. by months are shown in Appendix (1), along with unit values. It is apparent that imports were unusually large and unit values were unusually low in each month, October to December, but particularly in November and December.

An examination of wholesale prices of Ontario greenhouse tomatoes at Toronto and Montreal, the principal markets, shows that in October they were higher in 1967 than in 1966; in November they were lower than in 1966; and in December they were substantially lower than in 1966, but any depressing effect exerted by the unusually large volume of imports in the fall of 1967 appears to have been substantially moderated by the differentiation between the two kinds of tomatoes. For example, although the volume of imports was 31 per cent higher in the fall of 1967 than 1966 and the unit value was 25 per cent lower, the average return received by Essex County growers was reported to be the same in 1967 as in 1966 (19 cents a pound); the volume of sales, however, was reported to be about 8 per cent lower in the fall of 1967 than in 1966.

Also, wholesalers, brokers and federal officers in Toronto and Montreal informed the Tariff Board that in the fall of 1967 there was an unusually high incidence of complaints regarding blotchy ripening of Ontario greenhouse tomatoes; in interviews with producers many references were made to the increasing occurrence of bacterial canker in Leamington greenhouses in that year. It may well be that problems associated with plant diseases were at least as troublesome to Ontario producers as the large imports and may have had a significant effect on aggregate returns from the fall crop of 1967.

Even the growers' proposed rate of 5 cents a pound would not greatly change their competitive position in respect of the imported field product. The survival of the industry and its very considerable expansion in recent years are explainable only in terms of product differentiation in which its special kind of tomato supplies a large but limited market at a retail price approximately double that of field tomatoes.

Imports of greenhouse tomatoes are not large relative to imports of field-grown tomatoes but they are a significant part of the supply of greenhouse tomatoes, particularly in Quebec. The available statistics indicate that, in 1967, of the 15.7 million pounds of greenhouse tomatoes consumed in the spring, 3.2 million pounds were imported, and of the 7.2 million pounds consumed in the fall, 0.9 million pounds were imported, entirely into Quebec. The greenhouse tomatoes that are consumed in other provinces are produced almost entirely locally or are supplied by Ontario.

As has been noted, imported greenhouse tomatoes are generally all from Ohio. They are mainly of pink varieties which are preferred in Quebec markets where they command a premium in price over Ontario pink varieties and a much larger premium over red greenhouse tomatoes, the principal kind grown by Canadian producers. Interviews indicated that Ohio tomatoes are preferred over Ontario pinks mainly because of appearance and uniformity of size and color. However, some part of these imports may very well occur because additional supplies of pinks are not available from Ontario; one spokesman also noted that uncertainties occurred, from time to time, concerning their availability.

Because prices of imported greenhouse tomatoes are ordinarily much higher than those of the field-grown imports, the comparative impact of the ad valorem duty and the specific rate is substantially different than for field tomatoes. Cleveland greenhouse pink tomatoes usually range in price from 26 cents to as much as 40 cents (or more) a pound; hence, the 10 p.c. duty provides considerably more protection to Canadian growers than would the $1\frac{1}{2}$ cents per pound specific duty. Even the proposed specific rate of 5 cents a pound would afford only fairly small additional protection at times. However, unlike field tomatoes, Cleveland greenhouse tomatoes are in direct competition with the Canadian product and the landed cost of these imports, at Montreal, will set a ceiling on the price for domestic greenhouse tomatoes when the Cleveland product was available in quantity.

The relationship of the cash cost to the cash benefit for tomatoes and cucumbers has been noted earlier. Even if it is assumed that producers receive the full cash benefits of the tariff, the benefits are disproportionate to the cash cost to consumers. At retail, the cash cost of the duty to consumers might be of the order of two million dollars annually for a cash benefit to producers of tomatoes of perhaps \$200,000, with great disparities in costs and benefits from one region to another. The effect of this situation led to the following statement by a spokesman for the Consumer Protest Association.

"Not only would a tariff put the entire burden on consumers by forcing some to pay higher prices if they want the product at all, and others to forego it entirely ... but the burden bears no necessary relation to the subsidy it affords growers. Thus its effects are uncertain. Its impact, however, would be just like a tax on food and would fall most heavily on low income families who must spend a higher proportion of their incomes for food." (Vol. 3, p. 425, 426)

The growers stressed that imports were making the domestic greenhouse industry unprofitable. Losses were shown to have been sustained under the cost allocations and yields shown in one Ontario study in which a small number of operators participated. However, the impact of inadequate yields can be very important, and the yields per acre of the respondents to the survey were lower than those which the author of the study indicated can, on average, be expected. If yields such as the author of the Ontario study regarded as average had been realized, and the average net returns to growers in 1965 and 1966 had been realized, the return to the owner for labour and management could have been between \$7,500 and \$22,000 per acre, depending, in part, on whether he was using glass or plastic construction and the rate of depreciation assigned to the greenhouse.

It has been pointed out above that whatever the trend in profitability has been, it was not such as to prevent the very substantial investment in greenhouse acreage and the increases in production of cucumbers and tomatoes that have occurred in the past six or seven years.

SUMMARY AND CONCLUSIONS

The present Reference deals with the Canadian greenhouse vegetable growing industry, the two most important products of which are cucumbers and tomatoes. Because of the terms of reference the Board is making no recommendations covering the duties of the Customs Tariff to protect domestic vegetables grown elsewhere than in the greenhouse.

Cucumbers grown in the greenhouse are largely harvested and sold from early March to late June.

Tomatoes grown in the greenhouse are largely harvested and sold in two seasons, the first being from early April to mid-July and the second, from early October until December.

The cucumbers of tariff item 8712-1 are now entered free of duty at all times under the British Preferential Tariff but such imports during the greenhouse season are negligible. Under the Most-Favoured-Nation Tariff they are entered at a rate of either 10 p.c. ad valorem or $2\frac{1}{4}$ cts. per pound; the Customs Tariff provides that the specific duty shall not be maintained in force in excess of 22 weeks which may be divided into two separate periods during any 12-month period ending March 31st.

In the last decade, the provision for a split period has been used only once, and that in Ontario and Quebec, in 1960-61. Generally, the specific duty has been applied in Ontario and Quebec on the average for some 20 weeks roughly from mid-April to mid-September, though for the last six years it was applied for the full 22 weeks each year. The specific duty on cucumbers has been applied generally in the Central and Atlantic Provinces to protect the greenhouse crop from April until July and to protect the field crop from July until November.

Under tariff item 8724-1, tomatoes are also now entered free of duty at all times under the British Preferential Tariff but such imports during the greenhouse season are negligible. Under the Most-Favoured-Nation Tariff they are entered free of duty during the months of January, February and March; for the balance of the year tomatoes are entered at a rate of either 10 p.c. ad valorem or $1\frac{1}{2}$ cts. per pound. The Customs Tariff provides that the specific duty shall not be maintained in force in excess of 32 weeks during any 12-month period ending March 31st. In Quebec and Ontario the specific duty, over the last eight years, has been applied only for some 19 weeks on the average and, in the last four years, only over some 14 weeks. In contrast to the situation for cucumbers, the specific duty on tomatoes has been applied only during the period in which the field crop is harvested and sold.

The specific rate affords greater protection than the ad valorem rate when the value for duty of cucumbers is less than $22\frac{1}{2}$ cts. per pound and when that of tomatoes is less than 15 cts. per pound. Generally, during the greenhouse season, the specific rate has afforded significant additional protection for cucumbers but it would afford only small additional protection for tomatoes. The specific rates are not applicable to imports from countries which benefit from the British

Preferential Tariff, but this fact is not now of great concern because such imports are not significant.

In these circumstances, the Ontario Greenhouse Vegetable Producers' Marketing Board proposed that the specific duty on cucumbers be increased from $2\frac{1}{4}$ cts. per pound to $4\frac{1}{2}$ cts. per pound and be applied automatically on March 1st, approximately one month earlier than is now the practice. The automatic application of the specific duty would be a major change from current practice under which the specific duty is applied only when Canadian production is available in some reasonable volume to supply the domestic market. The proposal further urged that the specific duty on tomatoes be increased from $1\frac{1}{2}$ cts. to 5 cts. per pound and be maintained in force during the months of April, May and June to protect spring greenhouse production and during the months of October and November to protect the autumn greenhouse production.

The proposal for increased rates received support by letter or telegram from the Maple Ridge Hothouse Growers' Association of Haney, British Columbia, from the Vancouver Island Greenhouse Growers, from Local 374 of the Ontario Farmers' Union of Leamington, Ontario, from the Ontario Fruit and Vegetable Growers' Association, from the Greenhouse Growers of Nova Scotia and from the Red Hat Cooperative Ltd. of Medicine Hat, Alberta.

For the cucumbers of tariff item 8712-1 the growers' proposal would, in effect, quadruple the existing rate of 10 p.c. during March and double the existing specific rate of $2\frac{1}{4}$ cts. per pound during April, May and June. For tomatoes, it would increase the existing rate of 10 p.c. nearly fivefold for the spring crop and nearly fourfold for the autumn crop.

No proposal for change in rates of duty on any other vegetables produced in greenhouses was made to the Board.

The proposal for increased rates of duty on cucumbers and tomatoes was opposed by the Quebec Wholesale Fruit and Vegetable Association, by Steinberg's Limited, by the Government of Mexico and by the Consumers' Association of Canada; it was also opposed by the Canadian Consumers' Protest Association and the Ottawa Consumers' Protest Association which, in a joint brief, sought free entry for both cucumbers and tomatoes, a proposal which the Board considered to be within its terms of reference only in relation to those periods in which domestic greenhouse production is affected by such imports.

The growers urged that the effect of imports on prices was endangering their industry because their costs were too high relative to their returns; they were particularly apprehensive concerning increasing imports from Mexico.

Others were concerned with the increased cost to consumers arising from increases in duties and claimed that the cost to the Canadian public would be disproportionate to the benefit to the growers; they deemed unrealistic the encouragement of vegetable production in an artificial environment to compete with imports of field-grown vegetables.

The Board requested from the Ontario Greenhouse Vegetable Producers' Marketing Board, the representative of the producers of greenhouse vegetables, information relating, among other things, to financial records, costs of production, returns to growers, changes in operations over the last decade and data concerning weekly shipments. The failure of the producers to supply nearly all of this information after repeated requests led to additional research work, with consequent delay, in obtaining the information from other sources. From these other sources the Board received the measure of cooperation it had originally expected from the producers, particularly as it understood the producers to be anxious for a report at an early date.

Because of a variety of circumstances, field-grown cucumbers and tomatoes are commercially available from Canadian production for only the three-month period from July to October. For the balance of the year the market for tomatoes and cucumbers is largely supplied by domestic greenhouse production or field-grown imports, mainly from Mexico, California and Florida.

Thus, from approximately the beginning of December to the end of February, there are virtually no supplies of domestically grown cucumbers and from the beginning of December to the end of March, no supplies of domestically grown tomatoes. However, even in those months of the year when domestic greenhouse or field-grown cucumbers and tomatoes are being harvested and marketed, there is no month when Canadian production of these is sufficient to supply the Canadian demand; the dependence upon imports is greatest during those months when field production is not available and in those areas where greenhouse production is small.

During the four spring months, March to June inclusive, when domestic greenhouse cucumbers are available, Canadian consumption has more than doubled in the decade, 1957 to 1967, from 18.4 million pounds to 37.5 million pounds. However, annual imports of cucumbers during these months have remained relatively stable at about six million pounds per year while domestic production has more than trebled, from about 10 million pounds in 1957 to 33 million pounds in 1967. Thus, imported cucumbers, which accounted for nearly 40 per cent of Canadian consumption in the late fifties, currently supply only 16 per cent of the total.

These very large increases in production and the substantial displacement of imported cucumbers in the domestic market indicate the profitability of greenhouse cucumber production to have been sufficient to encourage the large investment required for the necessary expansion of greenhouse facilities on such a scale; between 1959 and 1966 the total greenhouse space reported for Essex County, Ontario, doubled. The very considerable expansion of production also indicates that the protection afforded domestic greenhouse cucumbers by freight-cost advantages, by the tariff and by the premium Canadian consumers are prepared to pay to obtain greenhouse cucumbers, has been sufficient to induce a very rapid rate of growth during this period. Moreover, in this decade, Canadian producers have been exporting greenhouse cucumbers to the U.S.A. in competition with both field and greenhouse cucumbers produced in that country.

As already noted, greenhouse tomatoes are marketed largely in the months of April, May and June, the spring crop, and in October and November, the autumn crop. The spring crop is by far the more important with production nearly twice as large as in the fall and the value of production more than $2\frac{1}{2}$ times that of the fall; producers obtain significantly higher returns per pound for spring tomatoes.

During the past decade, 1957 to 1967, the spring and fall crops combined have approximately trebled in volume and in value. The available data suggest that the proportional increase in output in the spring has been greater than in the fall. Currently, production in the spring is about 13 million pounds valued at \$3.5 million and in the fall, around 7 million pounds valued at approximately \$1.4 million.

However, in spite of the very substantial increase in output, and in contrast to cucumbers, imported tomatoes continue to supply a very large part of the Canadian demand in the spring and fall greenhouse seasons, though this share of the market, more than 80 per cent, is significantly less than it was a decade ago when imports supplied more than 90 per cent of the market in the greenhouse seasons. Since 1959, apart from the unusually large imports in the fall of 1967, there appears to have been no particular trend in the volume of imports either upward or downward, during the greenhouse seasons.

The principal change that has occurred in respect of imports of tomatoes is that Mexico has been displacing the U.S.A. as the principal supplier of tomatoes in the spring. In 1957 imports from Mexico were only 31 per cent of the spring total; in 1967 Mexico accounted for 61 per cent of the imports in the spring. The U.S.A. is by far the most important source of tomato imports in the fall and has supplied from 94 to 99 per cent of these for several years.

Canadian consumption of tomatoes, during the greenhouse seasons, has risen sharply in the past decade from about 90 million pounds to 120 million pounds, an increase of 30 million pounds or one-third. Although Canadian production averaged only 11 per cent of consumption in the period 1958-62 and even now accounts for only about 15 per cent of the domestic consumption, about two-thirds of this additional demand was supplied by tomatoes produced in Canadian greenhouses. Thus, imports do not appear to have inhibited the growth of Canadian greenhouse tomato production and Canadian production has captured a significantly larger share of the growing domestic market in recent years.

At the least, it is difficult to reconcile the expansion of greenhouse cucumber and tomato production with claims that imports are threatening the viability of the industry. Indeed, the industry's rapid growth, the increasing share of the domestic market which it has captured, and its demonstrated ability to compete in U.S. markets, are more probably associated with profitability and the ability of the industry to attract the relatively large investments which were necessary to increase its productive capacity.

Such a conclusion is supported by the Board's investigations of costs and returns in the production of greenhouse cucumbers and tomatoes. These indicated that an efficient operator can obtain annual returns for his labor and management of \$8,000 to \$9,000 from the

operation of a one acre glass greenhouse and significantly higher returns from a one acre plastic greenhouse; few economies appear likely on mere increase in scale.

An examination of financial records of Canadian greenhouse operations obtained from sources other than the Ontario Marketing Board clearly indicated that an efficient operator can and does obtain returns considerably greater than those suggested by the Ontario Marketing Board's representations and indeed greater than those suggested by the Tariff Board elsewhere in this report as obtainable by an efficient operator.

Reference was previously made to the premium paid for greenhouse cucumbers relative to the imported, field-grown product. At Montreal, this premium rarely exceeds five cents per pound, or about \$1.00 on a carton of 24 cucumbers and, according to the spokesman for the Ontario Marketing Board, the margin "widens when the pressure of imports is less, and it narrows when the pressure is heavy". (Vol. 2, p. 184) This premium provides significantly more protection for greenhouse cucumbers than does the Customs Tariff.

Consumers and dealers apparently differentiate much more sharply between greenhouse and field-grown tomatoes. In Montreal and Toronto where large quantities of both kinds are regularly sold, the premium that greenhouse tomatoes command is, at times, as much as 100 per cent of the wholesale price of imported field-grown tomatoes. In recent years the premium, at wholesale in Montreal, for Ontario greenhouse reds relative to imported vine ripers has varied from about 10 to 16 cents a pound; in Toronto the premium has generally varied from 8 to 14 cents a pound.

Because the value for duty of field-grown tomatoes imported during the greenhouse season rarely exceeds 12 cents a pound, it is apparent that the differentiation in the market between greenhouse and field-grown tomatoes constitutes by far the most important element of protection for domestic greenhouse tomatoes; in terms of ad valorem equivalence, this premium is of the order of 100 p.c. to 150 p.c., or even more, on the value for duty of field-grown imports.

Although most of the imports are field-grown, Canada also imports fairly substantial quantities of Ohio greenhouse tomatoes almost entirely into the province of Quebec. These imports are preferred to Ontario greenhouse tomatoes mainly because of their appearance and greater uniformity of size and colour. In Montreal, pink greenhouse tomatoes command an additional premium relative to red varieties and greenhouse tomatoes imported from the state of Ohio are regularly sold at a premium relative to Ontario greenhouse tomatoes. However, to some extent, Ohio greenhouse tomatoes are imported because additional supplies of greenhouse pinks are not available from Ontario. Imports of Ohio greenhouse tomatoes are currently more than three million pounds in the spring and nearly one million pounds in the autumn; they represent about 18 per cent of the Canadian consumption of greenhouse tomatoes.

In the spring of 1967, Essex County produced 7.5 million pounds of greenhouse tomatoes; thus, to displace the imports into Quebec of Ohio tomatoes, Essex growers would have to increase their

spring production by nearly 50 per cent. Moreover, because pink tomatoes are preferred to reds and command a substantial price premium over reds in Quebec markets, there may be a prospect of additional sales and revenue, in this market area, which has not been fully exploited.

There is little doubt that where Customs duties are exigible on imported vegetables competing with greenhouse production such duties enhance the price of both products and thus the consumers pay more for them than they otherwise would. Two unfavourable consequences flow from this fact.

First, as the price of these vegetables increases there will necessarily be some decrease in consumption, particularly among that sector of the population with lower incomes; apart from its consequences for the producers, such a decrease in consumption has undesirable aspects in a country deprived of field production for so many months by climatic conditions and in which greenhouse production cannot meet total demand.

Secondly, as shown in tables 65 and 66, in most areas of the country the enhancement of cost to the consumers appears disproportionate to the benefits afforded to the producers. Because 85 per cent of the tomato consumption is supplied by imports, the cash costs are far in excess of any probable cash benefits to Canadian producers. For Canada, as a whole, the cash costs, at wholesale, of the existing duties on tomatoes are currently around \$1.3 million per year during the greenhouse seasons compared with maximum cash benefits to producers of about \$0.2 million. The cash costs at the consumer level are even larger because markups on values including duty payments are part of the retail price but the cash benefits to producers remain the same.

The costs of the duties are incurred according to the quantities consumed while their benefits accrue in relation to the volume produced; the existing duties give significant benefits mainly to producers in Ontario where some 80 per cent of the value of sales of domestic greenhouse vegetables are produced, but the cash costs are borne also by such areas as Quebec and the Prairie Provinces in which greenhouse vegetable production is very small. For example, in 1967 the cash costs at wholesale of the existing duties on tomatoes, in Quebec and the Prairie Provinces, was \$656,000 and the cash benefits to producers in these regions was about \$4,000. Even in Ontario, where the benefits from the duties on tomatoes are greatest, the cash costs at wholesale were \$394,000 in 1967 compared with cash benefits to Ontario producers of \$133,000.

As the foregoing indicates, the Canadian greenhouse vegetable industry has experienced rapid growth for several years and has expanded its productive facilities at considerable capital cost. The investment required to provide these facilities could have been attracted to the industry only if its past performance and prospects gave reasonable indications of long term viability and profitability. The Tariff Board's research supports such an assessment.

The fears, expressed by producers, that imports of low cost, field-grown vegetables were likely to have serious adverse effects on their operations appear to be unfounded. Unit values of imports have

not decreased; imports of neither cucumbers nor tomatoes in the greenhouse seasons have been increasing in spite of the substantial growth of Canadian consumption; indeed, Canadian greenhouse vegetables have captured a significantly larger share of the domestic market. Moreover, Canadian greenhouse vegetables have competed successfully in U.S. markets in direct competition with field-grown and greenhouse vegetables produced in the U.S.A.

Although the protection afforded by distance and the Customs Tariff is quite substantial, additional and even more significant protection is provided by the consumers' differentiation between greenhouse cucumbers and tomatoes and the field-grown imports. The premiums commanded by greenhouse tomatoes are particularly large and in ad valorem equivalence are comparable to rates of duty of 100 p.c. to more than 150 p.c., on the value for duty of imported, field-grown tomatoes.

The marketing of greenhouse vegetables is a somewhat complex procedure involving many agencies, each of which exerts some influence on the prices received by growers or paid by consumers.

An inquiry is proceeding into this phase as a result of complaints of certain undesirable practices; this inquiry is being conducted by the Ontario Food Council of Toronto. The press reports of this inquiry indicate that the Council's report may well cast further light upon this phase of the greenhouse vegetable industry; because of the Council's inquiry and its prospective report, the Board makes no observations on marketing practices in its conclusions.

In all these circumstances, the Board does not recommend any changes in the duties of Customs now levied upon cucumbers or tomatoes imported during the period of the harvest and sale of domestic greenhouse production.

Insofar as cucumbers are concerned, there is no domestic production, field or greenhouse, during the months of December, January and February and no need for protective duties during this period. In consequence, the Board recommends provision for the free entry of cucumbers during these three months.

Insofar as tomatoes are concerned, the domestic producers neither seek nor need protection during the month of December. In consequence, the Board recommends that the free entry for tomatoes now provided during the months of January, February and March under the Most-Favoured-Nation and the General Tariffs in tariff item 8724-1 be extended to include December also.

Because the Board's recommended items would continue to be governed by the general descriptive heading for tariff items 8701-1 to 8727-1 inclusive and by the provisions of Section 13 of the Customs Tariff, they are shown in the Recommended Schedule as revisions of existing items 8712-1 and 8724-1, and are so numbered.

RECOMMENDED SCHEDULE

That the enumeration of goods and rates of duty of tariff items 8712-1 and 8724-1 of Schedule A to the Customs Tariff be amended to be as follows:

<u>Tariff</u> <u>Item</u>	<u>Goods Subject to Duty and Free Goods</u>	<u>B.P.</u>	<u>M.F.N.</u>	<u>G.T.</u>
8712-1	Cucumbers, n.o.p. per pound	Free	Free or 2½ cts. or 10 p.c.	Free or 2½ cts. or 10 p.c.

The Free rate shall apply during the months of December, January and February.

During the remaining months in any 12 month period ending 31st March, the specific duty shall not be maintained in force in excess of 22 weeks which may be divided into two separate periods, and the 10 per cent duty shall apply whenever the specific duty is not in effect.

8724-1	Tomatoes per pound	Free	Free or 1½ cts. or 10 p.c.	Free or 1½ cts. or 10 p.c.
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The Free rate shall apply during the months of December, January, February and March.

During the remaining months in any 12 month period ending 31st March, the specific duty shall not be maintained in force in excess of 32 weeks, and the 10 per cent duty shall apply whenever the specific duty is not in effect.

F.C. Audette
Chairman

W. J. Dwyer
Member

A. W. B. Kilpatrick
Member

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Table 1
Greenhouse Cucumber Production by Region,
1962-67

	1962	1963	1964	1965	1966	1967 (a)
<u>Atlantic Provinces</u>						
Quantity	426,120	358,540	549,080	494,720	632,280	633,000
Value	64,264	51,315	84,250	75,147	107,617	106,000
<u>Quebec</u>						
Quantity	303,440	379,200	251,560	95,490	175,920	248,000
Value	14,715	17,880	23,341	5,690	11,776	22,000
<u>Ontario</u>						
Quantity	17,438,380	23,676,640	24,777,600	27,786,560	27,565,600	29,279,000
Value	1,876,014	2,475,598	2,933,719	3,279,191	3,594,184	3,478,000
<u>Essex County</u>						
Quantity	17,065,440	23,247,350	24,346,260	27,303,570	26,978,390	28,408,000
Value	1,826,002	2,417,724	2,872,859	3,221,821	3,507,191	3,349,000
<u>Prairie Provinces</u>						
Quantity	705,540	1,311,130	584,390	702,140	610,920	637,000
Value	124,551	160,942	81,663	110,072	97,112	108,000
<u>British Columbia</u>						
Quantity	1,753,000	1,843,000	2,084,000	2,127,000	2,197,000	2,495,000
Value	327,617	370,561	425,463	481,066	517,957	474,000
<u>Canada</u>						
Quantity	20,626,480	27,609,780	28,275,730	31,205,910	31,181,720	33,292,000
Value	2,407,161	3,081,156	3,554,221	3,951,166	4,328,646	4,188,000

(a) Estimated

Source: D.B.S. Cat. No. 22-202; Essex County Growers Association and British Columbia Dept. of Agriculture

Table 2

Greenhouse Tomato Production by Region,
1962-67

	1962	1963	1964	1965	1966	1967(a)
<u>Atlantic Provinces</u>						
Quantity lb.	384,570	518,408	716,755	702,571	898,284	870,000
Value \$	116,390	131,336	208,777	203,141	255,505	274,000
<u>Quebec</u>						
Quantity lb.	129,568	74,431	67,985	77,691	90,217	251,000
Value \$	19,249	19,294	18,865	19,075	15,195	21,000
<u>Ontario</u>						
Quantity lb.	9,528,886	12,268,805	14,110,958	14,942,800	17,459,118	15,304,000
Value \$	2,116,394	2,567,783	3,150,484	3,333,468	3,759,928	3,785,000
<u>Essex County</u>						
Quantity lb.	7,996,780	10,410,279	12,415,360	13,506,711	15,324,071	13,256,000
Value \$	1,704,989	2,128,350	2,738,179	2,882,790	3,301,759	3,263,000
<u>Prairie Provinces</u>						
Quantity lb.	185,356	167,172	193,807	238,588	258,804	196,000
Value \$	50,639	40,178	53,546	65,627	67,926	50,000
<u>British Columbia</u>						
Quantity lb.	3,174,000	3,068,000	2,908,000	2,975,000	3,248,000	3,308,000
Value \$	682,615	733,759	728,490	787,101	826,286	1,141,000
<u>Canada</u>						
Quantity lb.	13,403,980	16,102,016	17,997,505	18,988,446	22,017,823	19,929,000
Value \$	2,985,787	3,493,870	4,160,162	4,408,412	4,942,132	5,271,000

(a) Estimated

Source: D.B.S. Cat. No. 22-202; Essex County Growers Association and British Columbia Dept. of Agriculture

Table 3

Greenhouse Tomato Production by Region,
Spring and Fall Seasons, 1965-67

	<u>Spring</u>			<u>Fall</u>		
	<u>1965</u>	<u>1966</u>	<u>1967</u> ^(a)	<u>1965</u>	<u>1966</u>	<u>1967</u> ^(a)
<u>Atlantic Provinces</u>						
Qty. '000 lb	585	601	581	118	294	289
Val. '000 \$	171	184	179	33	71	95
<u>Quebec</u>						
Qty. '000 lb	61	37	55	71	53	196
Val. '000 \$	15	7	11	4	8	10
<u>Ontario</u>						
Qty. '000 lb	8,662	10,752	9,127	6,281	6,707	6,177
Val. '000 \$	2,094	2,539	2,653	1,239	1,221	1,132
<u>Prairie Provinces</u>						
Qty. '000 lb	158	176	152	73	83	44
Val. '000 \$	46	41	37	17	27	13
<u>British Columbia</u>						
Qty. '000 lb	2,559	2,920	2,974	417	328	334
Val. '000 \$	677	743	1,026	110	83	115
<u>Canada</u>						
Qty. '000 lb ^(b)	12,031	14,497	12,889	6,957	7,521	7,040
Val. '000 \$ ^(b)	3,005	3,516	3,906	1,403	1,426	1,365

(a) Estimated

(b) Canada totals include some tomatoes which could not be assigned to a specific region

Source: D.B.S. Cat. No. 22-202; Essex County Growers Association and British Columbia Dept. of Agriculture

Table 4

Cucumbers: Supply and Disappearance, by Region, March to June, 1962-67

Region	Year	Production	Received from Other Regions(b)	Imports	Total Supply - thousand pounds -	Shipped to Other Regions(b)	Exports	Apparent Consumption	Imports as % of Consumption
<u>Atlantic Provinces</u>									
	1962	426	30	443	899	-	-	899	49
	1963	359	420	454	1,233	-	-	1,233	37
	1964	549	250	624	1,423	-	-	1,423	44
	1965	495	180	857	1,532	-	-	1,532	56
	1966	632	150	1,162	1,944	-	-	1,944	60
	1967	633(a)	85	1,026	1,744	-	-	1,744	59
<u>Quebec</u>									
	1962	303	565	3,803	4,671	-	-	4,671	81
	1963	379	2,365	3,119	5,863	-	-	5,863	53
	1964	252	3,825	3,147	7,224	25	-	7,199	44
	1965	95	3,415	2,994	6,504	-	-	6,504	46
	1966	176	1,750	3,401	5,327	-	-	5,327	64
	1967	248(a)	2,855	3,367	6,470	-	-	6,470	52
<u>Ontario</u>									
	1962	17,438	-	1,657	19,095	1,725	1,260	16,110	10
	1963	23,677	-	1,793	25,470	4,690	690	20,090	9
	1964	24,778	25	337	25,140	5,730	1,020	18,390	2
	1965	27,787	-	326	28,113	5,165	1,170	21,778	1
	1966	27,566	-	2,071	29,637	3,730	1,680	24,227	9
	1967	29,279(a)	-	603	29,882	4,970	1,680(a)	23,232	3

Cucumbers, Supply and Disappearance, by Region, March to June 1962-67 (Cont'd)

Table 4
(Cont'd)

<u>Region</u>	<u>Year</u>	<u>Production</u>	<u>Received from Other Regions (b)</u>	<u>Imports</u>	<u>Total Supply</u>	<u>Shipped to Other Regions (b)</u>	<u>Exports</u>	<u>Apparent Consumption</u>	<u>Imports as % of Consumption</u>
<u>Prairie Provinces</u>									
	1962	632	1,125	348	2,105	-	-	2,105	17
	1963	1,311	1,930	299	3,541	-	-	3,541	8
	1964	584	1,700	151	2,435	-	-	2,435	6
	1965	678	1,645	469	2,792	-	-	2,792	17
	1966	589	1,855	337	2,781	-	-	2,781	12
	1967	637(a)	2,025	467	3,129	-	-	3,129	15
<u>British Columbia</u>									
	1962	1,753	30	259	2,042	25	-	2,017	13
	1963	1,843	-	368	2,211	25	90	2,096	18
	1964	2,084	30	198	2,312	75	90	2,147	9
	1965	2,127	-	455	2,582	75	90	2,417	19
	1966	2,197	-	388	2,585	25	90	2,470	16
	1967	2,495(a)	30	563	3,088	25	90(a)	2,973	19
<u>Canada</u>									
	1962	20,626	-	6,509	27,135	-	1,260	25,875	25
	1963	27,610	-	6,033	33,643	-	780	32,863	18
	1964	28,276	-	4,457	32,733	-	1,110	31,623	14
	1965	31,206	-	5,101	36,307	-	1,260	35,047	15
	1966	31,182	-	7,358	38,540	-	1,770	36,770	20
	1967	33,292(a)	-	6,026	39,318	-	1,770(a)	37,548	16

(a) Estimated

(b) Domestic product

Source: D.B.S. various publications; Canada and B.C. Department of Agriculture and Essex County Growers Assoc.

Table 5

Spring Tomatoes: Supply and Disappearance, By Region, April to June, 1962-67

<u>Region</u>	<u>Year</u>	<u>Production</u>	<u>Received from Other Regions</u>	<u>Imports</u>	<u>Total Supply - thousand pounds -</u>	<u>Shipped to Other Regions</u>	<u>Exports</u>	<u>Apparent Consumption</u>	<u>Imports as % of Consumption</u>
<u>Atlantic Provinces</u>									
	1962	305	-	3,215	3,520	-	-	3,520	91
	1963	410	75	3,132	3,617	-	-	3,617	86
	1964	570	172	2,896	3,338	-	-	3,338	87
	1965	585	50	2,920	3,555	-	-	3,555	82
	1966	601	125	3,258	3,984	-	-	3,984	82
	1967	581(a)	94	3,117	3,792	-	-	3,792	82
<u>Quebec</u>									
	1962	105	757	23,725	24,587	-	-	24,587	96
	1963	55	779	24,302	25,136	-	-	25,136	97
	1964	60	2,618	23,487	26,165	-	-	26,165	90
	1965	61	3,096	22,993	26,150	-	-	26,150	88
	1966	37	1,276	23,811	25,124	-	-	25,124	95
	1967	55(a)	2,093	24,971	27,119	-	-	27,119	92
<u>Ontario</u>									
	1962	5,335	-	19,192	24,527	732	212	23,583	81
	1963	5,765	-	17,780	23,545	854	-	22,691	78
	1964	8,185	-	17,575	25,760	2,856	118	22,786	77
	1965	8,662	-	18,705	27,367	3,146	176	24,045	78
	1966	10,752	-	19,817	30,569	1,445	352	28,772	69
	1967	9,127(a)	-	21,516	30,643	2,253	365	28,025	77

Table 5
(Cont'd)

Spring Tomatoes, Supply and Disappearance, by Region, April to June, 1962-67 (Cont'd)

Region	Year	Production	Received from Other Regions		Imports	Total Supply - thousand pounds -	Shipped to Other Regions		Exports	Apparent Consumption	Imports as % of Consumption
<u>Prairie Provinces</u>	1962	125	119		10,050	10,294	-	-	-	10,294	98
	1963	115	94		10,185	10,394	-	-	-	10,394	98
	1964	130	69		9,622	9,821	-	-	-	9,821	98
	1965	158	-		9,635	9,793	-	-	-	9,793	98
	1966	176	66		10,746	10,988	-	-	-	10,988	98
	1967	152(a)	88		11,213	11,453	-	-	-	11,453	98
<u>British Columbia</u>	1962	2,635	-		5,324	7,935	144	-	-	7,791	68
	1963	2,850	-		5,417	8,267	94	91	-	8,082	67
	1964	2,500	66		4,968	7,534	69	-	-	7,465	67
	1965	2,559	-		5,219	7,778	-	-	-	7,778	67
	1966	2,920	-		6,084	9,004	22	25	-	8,957	68
	1967	2,974(a)	-		6,722	9,696	22	-	-	9,674	69
<u>Canada</u>	1962	8,505	-		61,506	70,011	-	212	-	69,799	88
	1963	9,195	-		60,816	70,011	-	91	-	69,920	87
	1964	11,445	-		58,549	69,994	-	118	-	69,876	84
	1965	12,031	-		59,472	71,503	-	176	-	71,327	83
	1966	14,496	-		63,715	78,211	-	377	-	77,834	82
	1967	12,889(a)	-		67,539	80,428	-	365	-	80,063	84

(a) Estimated

Source: D.B.S. various publications; Canada and B.C. Departments of Agriculture and Essex County Growers Assoc.

Table 6

Fall Tomatoes: Supply and Disappearance, by Region, October to December, 1962-67

<u>Region</u>	<u>Year</u>	<u>Production</u>	<u>Received from Other Regions</u>	<u>Imports</u>	<u>Total Supply - thousand pounds -</u>	<u>Shipped to Other Regions</u>	<u>Exports</u>	<u>Apparent Consumption</u>	<u>Imports as % of Consumption</u>
<u>Atlantic Provinces</u>									
	1962	80	47	2,396	2,523	-	-	2,523	95
	1963	108	200	1,677	1,985	-	-	1,985	84
	1964	146	75	2,035	2,256	-	-	2,256	90
	1965	118	-	2,179	2,297	-	-	2,297	95
	1966	297	50	2,020	2,367	-	-	2,367	85
	1967	289 (a)	122	2,083	2,494	-	-	2,494	83
<u>Quebec</u>									
	1962	25	1,156	11,238	12,419	-	-	12,419	90
	1963	19	2,835	15,067	17,921	-	-	17,921	84
	1964	8	1,963	14,839	16,810	-	-	16,810	88
	1965	17	1,071	12,274	13,362	-	-	13,362	92
	1966	53	2,002	12,135	14,190	-	-	14,190	86
	1967	196 (a)	2,266	16,929	19,391	-	-	19,391	87
<u>Ontario</u>									
	1962	4,194	-	7,471	11,665	1,203	206	10,256	73
	1963	6,504	-	10,204	16,708	3,082	325	13,301	77
	1964	5,926	-	9,296	15,222	2,060	590	12,572	74
	1965	6,281	-	9,065	15,346	1,228	912	13,206	69
	1966	6,707	-	8,701	15,408	2,096	743	12,569	69
	1967	6,177 (a)	-	10,914	17,091	2,388	780	13,923	78

Table 6
(Cont'd)

Fall Tomatoes, Supply and Disappearance, by Region, October to December, 1962-67 (Cont'd)

<u>Region</u>	<u>Year</u>	<u>Production</u>	<u>Received from Other Regions</u>	<u>Imports</u>	<u>Total Supply - thousand pounds -</u>	<u>Shipped to Other Regions</u>	<u>Exports</u>	<u>Apparent Consumption</u>	<u>Imports as % of Consumption</u>
<u>Prairie Provinces</u>									
	1962	60	25	6,734	6,819	-	-	6,819	99
	1963	52	47	4,887	4,986	-	-	4,986	98
	1964	64	-	6,861	6,925	-	-	6,925	99
	1965	73	157	6,661	6,891	-	-	6,891	97
	1966	83	44	6,002	6,129	-	-	6,129	98
	1967	44(a)	-	7,162	7,206	-	-	7,206	99
<u>British Columbia</u>									
	1962	539	-	3,788	4,327	25	-	4,302	88
	1963	218	-	3,600	3,818	-	-	3,818	94
	1964	408	22	4,074	4,504	-	25	4,479	91
	1965	417	-	4,265	4,682	-	25	4,657	92
	1966	328	-	4,713	5,041	-	-	5,041	93
	1967	334(a)	-	5,404	5,738	-	-	5,738	94
<u>Canada</u>									
	1962	4,899	-	31,627	36,526	-	206	36,320	87
	1963	6,907	-	35,435	42,342	-	325	42,017	84
	1964	6,553	-	37,105	43,658	-	615	43,043	86
	1965	6,957	-	34,444	41,401	-	937	40,464	85
	1966	7,521	-	33,570	41,091	-	743	40,348	83
	1967	7,040(a)	-	42,491	49,531	-	780	48,751	87

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(a) Estimated

Source: D.B.S. various publications; Canada and B.C. Departments of Agriculture and Essex County Growers Assoc.

Table 7

Cucumbers, s.c. 91-55(a), Annual Imports, 1956-67

Tariff Item: 8712-1 (87(12))

Year	Total Imports		Unit	Dutiable	Duty	Duty as
	'000 lb.	\$'000	Value \$/lb.	Value \$'000	Collected \$	p.c. of Dutiable Value p.c.
1. Total						
1956	18,442	1,282	.07	1,282	187,175	14.6
1957	26,290	1,537	.06	1,537	235,841	15.3
1958	25,398	1,478	.06	1,478	300,141	20.3
1959	19,884	1,318	.07	1,318	222,591	16.9
1960	28,135	1,599	.06	1,599	267,869	16.8
1961	31,042	1,835	.06	1,832	252,799	13.8
1962	28,765	1,903	.07	1,902	287,973	15.1
1963	30,008	1,814	.06	1,813	264,256	14.6
1964 ^(b)	18,302	1,428	.08	1,428	236,353	16.6
1965 ^(b)	26,034	1,705	.07	1,704	292,622	17.2
1966	45,099	3,378	.07	3,374	423,202	12.5
1967	35,626	2,661	.07	2,658	385,310	14.5
2. United States						
1956	18,280	1,266	.07	1,266	185,583	14.7
1957	26,079	1,520	.06	1,520	234,171	15.4
1958	25,164	1,444	.06	1,444	296,711	20.6
1959	19,525	1,274	.07	1,274	218,140	17.1
1960	27,509	1,532	.06	1,532	261,140	17.0
1961	29,670	1,714	.06	1,711	240,400	14.1
1962	27,077	1,763	.07	1,763	273,342	15.5
1963	27,588	1,547	.06	1,547	236,842	15.3
1964 ^(b)	16,140	1,153	.07	1,153	208,411	18.1
1965 ^(b)	22,196	1,346	.06	1,345	256,864	19.1
1966	40,517	2,902	.07	2,898	375,742	13.0
1967	30,236	2,086	.07	2,084	327,795	15.7
3. Mexico						
1956	32	2	.06	2	182	10.0
1957	19	2	.10	2	193	10.0
1958	56	7	.12	7	658	10.0
1959	117	14	.12	14	1,399	10.0
1960	189	21	.11	21	2,128	10.0
1961	616	46	.07	46	4,774	10.4
1962	148	14	.09	14	1,387	10.0
1963	449	50	.11	50	5,758	11.6
1964 ^(b)	593	65	.11	65	6,514	10.0
1965 ^(b)	1,706	154	.09	154	15,303	9.9
1966	2,595	274	.11	274	27,296	10.0
1967	3,375	310	.09	308	30,972	10.0

Table 7
(Cont'd)

<u>Year</u>	<u>Total Imports</u>		<u>Unit</u>	<u>Dutiable</u>	<u>Duty</u>	<u>Duty as</u>
	<u>'000 lb.</u>	<u>\$'000</u>	<u>Value</u>	<u>Value</u>	<u>Collected</u>	<u>p.c. of</u>
			<u>\$/lb.</u>	<u>\$'000</u>	<u>\$</u>	<u>Dutiable</u>
						<u>Value</u>
						<u>p.c.</u>
4. Bahamas						
1956-59	-	-	-	-	-	-
1960	69	7	.10	7	669	10.0
1961	508	55	.11	55	5,501	10.0
1962	1,316	110	.08	110	10,994	10.0
1963	1,589	185	.12	185	18,549	10.0
1964 ^(b)	1,382	191	.14	191	19,048	10.0
1965 ^(b)	1,462	178	.12	178	17,747	10.0
1966	1,600	188	.12	188	18,739	10.0
1967	1,567	229	.15	229	22,822	10.0

(a) Prior to 1964, s.c. 119

(b) Excludes cucumbers for pickling; imports of cucumbers for pickling in 1964 were 10,635,610 lbs. valued at \$585,787 and in 1965 11,025,253 lbs. valued at \$619,624

Cucumbers, s.c. 91-55(a), Imports by Month, 1956-68

Tariff Item: 8712-1 (87(12))

Total Imports													
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Year
						-	thousand pounds	-					
1956	1,131	944	1,020	1,450	1,013	2,552	1,514	791	1,613	2,705	2,446	1,263	18,442
1957	2,008	1,273	1,057	1,153	1,765	2,899	1,625	3,016	4,870	2,487	2,566	1,571	26,290
1958	1,004	581	489	270	2,539	4,880	2,265	3,360	3,600	2,184	2,243	1,984	25,398
1959	1,287	816	352	1,018	461	4,055	2,665	2,230	1,571	2,589	1,723	1,116	19,884
1960	1,449	1,024	507	72	1,339	4,018	2,911	5,221	4,639	2,273	2,043	2,639	28,135
1961	1,726	1,147	1,103	740	1,672	2,588	2,937	6,298	5,034	2,768	2,605	2,424	31,042
						-	thousand dollars	-					
1956	98	98	102	98	96	200	86	36	78	154	126	110	1,282
1957	156	110	111	95	127	169	83	147	189	112	113	123	1,537
1958	149	87	65	33	136	226	109	155	135	150	128	104	1,478
1959	157	103	59	76	51	227	113	99	82	123	128	100	1,318
1960	156	123	59	10	105	206	133	210	201	123	143	131	1,599
1961	161	140	120	56	104	179	153	328	220	132	121	122	1,835
						-	cents per pound	-					
1956	.086	.104	.100	.067	.094	.079	.057	.046	.048	.057	.051	.087	.070
1957	.078	.086	.105	.083	.072	.058	.051	.049	.039	.045	.044	.079	.058
1958	.148	.150	.133	.124	.054	.046	.048	.046	.038	.069	.057	.052	.058
1959	.122	.126	.168	.075	.112	.056	.042	.044	.052	.048	.074	.090	.066
1960	.108	.120	.116	.138	.079	.051	.046	.040	.043	.054	.070	.050	.057
1961	.093	.122	.109	.076	.062	.069	.052	.052	.044	.048	.047	.050	.059

Table 8
(Cont'd)

Total Imports (Cont'd)														
	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>	
						- thousand pounds -								
1962	2,088	1,746	1,484	700	707	3,619	2,036	5,589	3,207	3,046	2,585	1,958	28,765	
1963	1,463	1,600	1,362	502	1,240	2,929	2,397	3,659	5,672	3,591	3,075	2,518	30,008	
1964(b)	2,295	783	390	652	1,154	2,261	1,002	1,087	919	2,021	2,389	3,348	18,302	
1965(b)	2,216	2,179	1,184	378	928	2,611	1,887	1,566	1,797	4,262	3,590	3,436	26,034	
1966	3,172	1,921	1,401	878	1,480	3,599	6,914	11,294	5,040	3,447	3,005	2,948	45,099	
1967	3,231	1,776	1,319	727	1,442	2,538	8,631	2,521	2,408	2,947	3,846	4,240	35,626	
1968	3,169	1,762	933	245	1,072	3,694	5,524							
						- thousand dollars -								
1962	184	180	139	53	56	180	104	339	179	186	160	144	1,903	
1963	226	182	126	37	56	147	131	224	214	163	148	159	1,814	
1964(b)	252	140	73	56	68	123	53	58	46	174	208	176	1,428	
1965(b)	199	198	128	28	45	134	92	91	136	217	201	236	1,705	
1966	299	247	145	79	99	261	481	792	321	202	222	230	3,378	
1967	330	235	148	65	83	163	564	189	184	263	223	215	2,661	
1968	304	262	112	30	75	208	289							
						- cents per pound -								
1962	.088	.103	.094	.075	.080	.050	.051	.061	.056	.061	.062	.073	.066	
1963	.154	.114	.093	.074	.045	.050	.055	.061	.038	.046	.048	.063	.060	
1964(b)	.110	.179	.187	.086	.059	.055	.053	.054	.050	.086	.087	.053	.078	
1965(b)	.090	.091	.108	.075	.049	.051	.049	.058	.076	.051	.056	.069	.065	
1966	.094	.129	.104	.090	.067	.073	.070	.070	.064	.059	.074	.078	.075	
1967	.102	.132	.112	.089	.058	.064	.065	.075	.076	.089	.058	.051	.075	
1968	.096	.149	.120	.122	.070	.056								

Table 8
(Cont'd)Imports from U.S.A.

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
	- thousand pounds -												
1956	1,131	877	932	1,450	1,007	2,552	1,514	791	1,613	2,705	2,446	1,263	18,280
1957	1,952	1,171	1,006	1,152	1,765	2,899	1,625	3,016	4,870	2,487	2,566	1,571	26,079
1958	954	522	364	270	2,539	4,880	2,265	3,360	3,600	2,184	2,243	1,984	25,164
1959	1,271	604	307	1,018	461	4,055	2,665	2,230	1,571	2,589	1,723	1,030	19,525
1960	1,163	854	399	66	1,311	4,018	2,911	5,221	4,639	2,273	2,043	2,611	27,509
1961	1,357	754	535	718	1,665	2,588	2,937	6,298	5,034	2,768	2,605	2,412	29,670
	- thousand dollars -												
1956	98	92	93	98	95	200	86	36	78	154	126	110	1,266
1957	152	102	106	95	127	169	83	147	189	112	113	123	1,520
1958	141	78	48	33	136	226	109	155	135	150	128	104	1,444
1959	154	77	51	76	51	227	113	99	82	123	128	92	1,274
1960	127	102	47	9	103	206	133	210	201	123	143	128	1,532
1961	140	97	64	56	103	179	153	328	220	132	121	121	1,714
	- cents per pound -												
1956	.086	.105	.099	.067	.094	.079	.057	.046	.048	.057	.051	.087	.069
1957	.078	.087	.105	.082	.072	.058	.051	.049	.039	.045	.044	.079	.058
1958	.147	.149	.132	.124	.054	.046	.048	.046	.038	.069	.057	.052	.057
1959	.122	.127	.167	.075	.112	.056	.042	.044	.052	.048	.074	.089	.065
1960	.109	.119	.117	.136	.079	.051	.046	.040	.043	.054	.070	.049	.056
1961	.104	.129	.119	.078	.062	.069	.052	.052	.044	.048	.047	.050	.058

Table 8
(Cont'd)Imports from U.S.A. (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
1962	1,892	1,063	886	535	659	3,619	2,036	5,589	3,207	3,046	2,585	1,958	27,077
1963	1,021	457	630	460	1,240	2,929	2,397	3,659	5,672	3,584	3,075	2,464	27,588
1964 (b)	1,185	389	162	474	1,087	2,247	1,002	1,087	919	2,021	2,389	3,178	16,140
1965 (b)	1,522	495	177	219	928	2,611	1,887	1,566	1,797	4,262	3,590	3,143	22,196
1966	1,631	647	193	740	1,460	3,599	6,914	11,294	5,040	3,447	2,876	2,674	40,517
1967	1,476	257	88	307	1,259	2,538	8,630	2,521	2,408	2,942	3,846	3,966	30,236
1968	2,165	404	93	114	1,033	3,694	5,524						
						- thousand pounds -							
1962	165	118	93	42	54	180	104	339	179	186	160	144	1,763
1963	160	50	62	36	56	147	131	224	214	163	148	156	1,547
1964 (b)	130	73	33	31	62	122	53	58	46	174	208	164	1,153
1965 (b)	128	58	22	14	45	134	92	91	136	217	201	209	1,346
1966	149	85	36	59	97	261	481	792	321	202	212	207	2,902
1967	148	38	15	28	71	163	564	189	184	262	223	200	2,086
1968	193	78	18	17	73	208	289						
						- thousand dollars -							
1962	.087	.111	.105	.079	.082	.050	.051	.061	.056	.061	.062	.073	.065
1963	.157	.110	.099	.078	.045	.050	.055	.061	.038	.045	.048	.063	.056
1964 (b)	.110	.188	.204	.065	.057	.054	.053	.054	.050	.086	.087	.051	.071
1965 (b)	.084	.116	.124	.065	.049	.051	.049	.058	.076	.051	.056	.067	.061
1966	.091	.132	.184	.080	.067	.073	.070	.070	.064	.059	.074	.077	.072
1967	.100	.150	.170	.093	.056	.064	.065	.075	.076	.089	.058	.050	.069
1968	.089	.193	.193	.149	.171	.056	.052						
						- cents per pound -							

Table 8
(Cont'd)Imports from Mexico

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
						-	thousand pounds -						
1956	-	26	-	-	6	-	-	-	-	-	-	-	32
1957	-	1	17	2	-	-	-	-	-	-	-	-	19
1958	-	9	47	-	-	-	-	-	-	-	-	-	56
1959	*	6	25	-	-	-	-	-	-	-	-	86	117
1960	121	10	13	*	27	-	-	-	-	-	-	18	189
1961	336	150	110	-	6	-	-	-	-	-	-	13	616
						-	thousand dollars -						
1956	-	1	-	-	1	-	-	-	-	-	-	-	2
1957	-	*	2	*	-	-	-	-	-	-	-	-	2
1958	-	1	5	-	-	-	-	-	-	-	-	-	7
1959	*	1	5	-	-	-	-	-	-	-	-	8	14
1960	15	1	2	*	2	-	-	-	-	-	-	1	21
1961	18	14	14	-	*	-	-	-	-	-	-	1	46
						-	cents per pound -						
1956	-	.040	-	-	.132	-	-	-	-	-	-	-	.057
1957	-	.138	.091	.163	-	-	-	-	-	-	-	-	.099
1958	-	.157	.110	-	-	-	-	-	-	-	-	-	.118
1959	.280	.134	.193	-	-	-	-	-	-	-	-	.096	.119
1960	.123	.131	.128	.233	.068	-	-	-	-	-	-	.084	.113
1961	.053	.092	.123	-	.049	-	-	-	-	-	-	.044	.075

Table 8
(Cont'd)Imports from Mexico (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
						-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
1962	47	54	47	-	-	-	-	-	-	-	-	-	148
1963	195	130	28	42	-	-	-	-	-	-	-	54	449
1964 (b)	357	150	68	8	-	-	-	-	-	-	-	9	593
1965 (b)	143	700	636	67	-	-	-	-	-	-	-	159	1,706
1966	483	888	675	127	20	-	-	-	-	-	129	274	2,595
1967	1,061	694	798	361	183	-	-	-	-	5	-	275	3,375
1968	726	1,144	839	131	39	-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
1962	4	5	5	-	-	-	-	-	-	-	-	-	14
1963	27	15	4	2	-	-	-	-	-	-	-	3	50
1964 (b)	26	22	15	2	-	-	-	-	-	-	-	1	65
1965 (b)	13	56	64	9	-	-	-	-	-	-	-	12	154
1966	39	98	84	19	2	-	-	-	-	-	10	23	274
1967	92	73	85	32	12	-	-	-	-	*	-	15	310
1968	70	144	94	14	3	-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
						-	-	-	-	-	-	-	-
1962	.077	.095	.109	-	-	-	-	-	-	-	-	-	.094
1963	.138	.115	.131	.037	-	-	-	-	-	-	-	.049	.111
1964 (b)	.073	.144	.219	.225	-	-	-	-	-	-	-	.103	.110
1965 (b)	.092	.080	.101	.136	-	-	-	-	-	-	-	.073	.090
1966	.080	.110	.125	.149	.078	-	-	-	-	-	.077	.084	.106
1967	.087	.106	.106	.090	.068	-	-	-	-	-	-	.053	.092
1968	.096	.126	.112	.107	.077	-	-	-	-	.091	-	-	-

Table 8
(Cont'd)

Imports from Other Countries

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
						- thousand pounds -							
1956	-	41	88	-	-	-	-	-	-	-	-	-	130
1957	56	101	35	-	-	-	-	-	-	-	-	-	191
1958	50	50	79	*	-	-	-	-	-	-	-	-	178
1959	16	206	19	-	-	-	-	-	-	-	-	-	242
1960	165	161	95	6	-	-	-	-	-	-	-	10	437
1961	34	243	458	21	-	-	-	-	-	-	-	-	756
						- thousand dollars -							
1956	-	4	10	-	-	-	-	-	-	-	-	-	14
1957	3	8	3	-	-	-	-	-	-	-	-	-	15
1958	8	8	12	*	-	-	-	-	-	-	-	-	28
1959	2	25	3	-	-	-	-	-	-	-	-	-	31
1960	14	20	10	1	-	-	-	-	-	-	-	1	46
1961	2	29	43	1	-	-	-	-	-	-	-	-	75
						- cents per pound -							
1956	-	.106	.110	-	-	-	-	-	-	-	-	-	.109
1957	.062	.080	.093	-	-	-	-	-	-	-	-	-	.077
1958	.167	.153	.150	.187	-	-	-	-	-	-	-	-	.156
1959	.136	.123	.149	-	-	-	-	-	-	-	-	-	.126
1960	.086	.124	.109	.159	-	-	-	-	-	-	-	.073	.105
1961	.068	.118	.094	.029	-	-	-	-	-	-	-	-	.099

Table 8
(Cont'd)Imports from Other Countries (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
						-	-	thousand pounds					
1962	149	628	550	165	48	-	-	-	-	-	-	-	1,540
1963	247	1,013	704	-	-	-	-	-	-	7	-	-	1,971
1964(b)	753	245	160	170	67	14	-	-	-	-	-	161	1,569
1965(b)	551	984	371	93	-	-	-	-	-	-	-	133	2,132
1966	1,058	386	533	11	-	-	-	-	-	-	-	-	1,987
1967	695	825	434	60	-	-	1	-	-	-	-	-	2,015
1968	278	214	-	-	-	-	-	-	-	-	-	-	
						-	-	thousand dollars					
1962	15	57	41	11	2	-	-	-	-	-	-	-	126
1963	39	117	60	-	-	-	-	-	-	1	-	-	216
1964(b)	96	46	25	23	6	1	-	-	-	-	-	12	210
1965(b)	59	84	42	5	-	-	-	-	-	-	-	15	205
1966	111	64	25	1	-	-	-	-	-	-	-	-	202
1967	90	122	48	4	-	-	*	-	-	-	-	-	267
1968	41	40	-	-	-	-	-	-	-	-	-	-	
						-	-	cents per pound					
1962	.099	.091	.074	.065	.044	-	-	-	-	-	-	-	.082
1963	.157	.115	.085	-	-	-	-	-	-	.119	-	-	.110
1964(b)	.128	.188	.157	.136	.088	.104	-	-	-	-	-	.074	.134
1965(b)	.106	.086	.113	.054	-	-	-	-	-	-	-	.114	.096
1966	.105	.166	.048	.130	-	-	-	-	-	-	-	-	.102
1967	.130	.149	.111	.065	-	-	.044	-	-	-	-	-	.132
1968	.147	.187	-	-	-	-	-	-	-	-	-	-	

(a) Prior to 1964 s.c. 119

(b) Excludes cucumbers for pickling; imports for pickling in 1964 were 10,635,610 lbs. valued at \$585,787 and in 1965, 11,025,233 lbs. valued at \$619,624

Table 9
(Cont'd)

Cucumbers, Imports by Month and Region, Quebec, March to June, 1962-68

Year & Origin	- pounds -			- dollars -		
	March	April	May	June	March-June	March-June
1962						
United States	331,323	160,584	489,726	2,193,425	3,175,058	
Mexico	-	-	-	-	-	182,840
Other	426,550	164,500	37,250	-	628,300	41,324
Total	<u>757,873</u>	<u>325,084</u>	<u>526,976</u>	<u>2,193,425</u>	<u>3,803,358</u>	<u>224,164</u>
1963						
United States	159,675	261,951	795,883	1,384,364	2,601,873	120,531
Mexico	15,500	-	-	-	15,500	1,386
Other	501,475	-	-	-	501,475	39,514
Total	<u>676,650</u>	<u>261,951</u>	<u>795,883</u>	<u>1,384,364</u>	<u>3,118,848</u>	<u>161,431</u>
1964						
United States	108,515	362,217	732,929	1,650,252	2,853,913	169,657
Mexico	-	1,232	-	-	1,232	166
Other	147,193	143,120	1,250	-	291,563	43,039
Total	<u>255,708</u>	<u>506,569</u>	<u>734,179</u>	<u>1,650,252</u>	<u>3,146,708</u>	<u>212,862</u>
1965						
United States	73,304	162,413	607,744	1,795,111	2,638,572	130,406
Mexico	291,258	-	-	-	291,258	23,281
Other	63,675	-	-	-	63,675	8,792
Total	<u>428,237</u>	<u>162,413</u>	<u>607,744</u>	<u>1,795,111</u>	<u>2,993,505</u>	<u>162,479</u>
1966						
United States	65,700	402,978	721,307	1,784,975	2,974,960	209,362
Mexico	311,357	42,000	-	-	353,357	34,763
Other	61,500	11,000	-	-	72,500	4,719
Total	<u>438,557</u>	<u>455,978</u>	<u>721,307</u>	<u>1,784,975</u>	<u>3,400,817</u>	<u>248,844</u>
1967						
United States	6,796	196,456	788,213	1,577,447	2,568,912	150,999
Mexico	205,000	236,650	122,700	-	564,350	45,405
Other	173,724	59,940	-	-	233,664	29,707
Total	<u>385,520</u>	<u>493,046</u>	<u>910,913</u>	<u>1,577,447</u>	<u>3,366,926</u>	<u>226,111</u>
1968						
United States	29,770	92,715	750,369	1,713,195	2,586,049	149,990
Mexico	272,290	78,940	38,720	-	389,950	28,224
Other	-	-	-	-	-	-
Total	<u>302,060</u>	<u>171,655</u>	<u>789,089</u>	<u>1,713,195</u>	<u>2,975,999</u>	<u>178,214</u>

Table 9
(Cont'd)

Cucumbers, Imports by Month and Region, Ontario, March to June, 1962-68

Year & Origin	March	April	May	June	March-June	March	April	May	June	March-June
			- pounds -						- dollars -	
1962										
United States	241,098	243,415	79,692	1,021,637	1,585,842	30,616	15,560	7,274	51,953	105,403
Mexico	-	-	-	-	-	-	-	-	-	-
Other	66,000	-	4,840	-	70,840	6,871	-	253	-	7,124
Total	<u>307,098</u>	<u>243,415</u>	<u>84,532</u>	<u>1,021,637</u>	<u>1,656,682</u>	<u>37,487</u>	<u>15,560</u>	<u>7,527</u>	<u>51,953</u>	<u>112,527</u>
1963										
United States	102,330	40,219	288,800	1,220,004	1,651,353	10,320	7,061	16,978	67,265	101,624
Mexico	-	-	-	-	-	-	-	-	-	-
Other	142,100	-	-	-	142,100	14,641	-	-	-	14,641
Total	<u>244,430</u>	<u>40,219</u>	<u>288,800</u>	<u>1,220,004</u>	<u>1,793,453</u>	<u>24,961</u>	<u>7,061</u>	<u>16,978</u>	<u>67,265</u>	<u>116,265</u>
1964										
United States	4,365	3,757	178,064	47,535	233,721	981	395	10,661	2,665	14,702
Mexico	-	-	-	-	-	-	-	-	-	-
Other	10,294	27,000	65,675	-	102,969	1,224	3,387	5,815	-	10,426
Total	<u>14,659</u>	<u>30,757</u>	<u>243,739</u>	<u>47,535</u>	<u>336,690</u>	<u>2,205</u>	<u>3,782</u>	<u>16,476</u>	<u>2,665</u>	<u>25,128</u>
1965										
United States	22,879	11,904	18,804	75,364	128,951	3,018	906	1,599	5,422	10,945
Mexico	12,980	-	-	-	12,980	1,491	-	-	-	1,491
Other	184,080	-	-	-	184,080	27,926	-	-	-	27,926
Total	<u>219,939</u>	<u>11,904</u>	<u>18,804</u>	<u>75,364</u>	<u>326,011</u>	<u>32,435</u>	<u>906</u>	<u>1,599</u>	<u>5,422</u>	<u>40,362</u>
1966										
United States	31,390	305,605	483,223	1,136,999	1,957,217	6,065	27,195	41,305	82,802	157,367
Mexico	29,484	-	-	-	29,484	3,572	-	-	-	3,572
Other	84,420	-	-	-	84,420	7,788	-	-	-	7,788
Total	<u>145,294</u>	<u>305,605</u>	<u>483,223</u>	<u>1,136,999</u>	<u>2,071,121</u>	<u>17,425</u>	<u>27,195</u>	<u>41,305</u>	<u>82,802</u>	<u>168,727</u>
1967										
United States	12,215	22,940	74,356	384,188	493,699	2,267	3,204	5,198	29,367	40,036
Mexico	3,496	-	-	-	3,496	397	-	-	-	397
Other	105,740	-	-	-	105,740	15,051	-	-	-	15,051
Total	<u>121,451</u>	<u>22,940</u>	<u>74,356</u>	<u>384,188</u>	<u>602,935</u>	<u>17,715</u>	<u>3,204</u>	<u>5,198</u>	<u>29,367</u>	<u>55,484</u>
1968										
United States	11,350	1,100	23,365	1,298,524	1,334,339	2,089	212	3,349	87,251	92,901
Mexico	37,100	14,580	-	-	51,680	5,282	2,041	-	-	7,323
Other	-	-	-	-	-	-	-	-	-	-
Total	<u>48,450</u>	<u>15,680</u>	<u>23,365</u>	<u>1,298,524</u>	<u>1,386,019</u>	<u>7,371</u>	<u>2,253</u>	<u>3,349</u>	<u>87,251</u>	<u>100,224</u>

Table 9
(Cont'd)

Cucumbers, Imports by Month and Region, Prairie Provinces, March to June, 1962-68

Year & Origin	- pounds -			- dollars -		
	March	April	May	June	March-June	March-June
<u>1962</u>						
United States	146,985	40,400	5,200	95,179	18,095	4,035
Mexico	14,475	-	-	-	1,873	-
Other	45,635	-	-	-	4,262	-
Total	<u>207,095</u>	<u>40,400</u>	<u>5,200</u>	<u>95,179</u>	<u>24,230</u>	<u>4,035</u>
<u>1963</u>						
United States	169,615	13,915	45,945	55,928	21,553	1,865
Mexico	2,100	2,475	-	-	183	453
Other	9,500	-	-	-	1,161	-
Total	<u>181,215</u>	<u>16,390</u>	<u>45,945</u>	<u>55,928</u>	<u>22,897</u>	<u>2,318</u>
<u>1964</u>						
United States	14,915	2,850	14,020	54,800	3,869	218
Mexico	48,390	-	-	-	9,694	-
Other	2,100	-	-	14,000	535	-
Total	<u>65,405</u>	<u>2,850</u>	<u>14,020</u>	<u>68,800</u>	<u>14,098</u>	<u>218</u>
<u>1965</u>						
United States	16,057	700	69,475	152,475	2,876	129
Mexico	193,327	37,424	-	-	21,793	5,012
Other	-	-	-	-	-	-
Total	<u>209,384</u>	<u>38,124</u>	<u>69,475</u>	<u>152,475</u>	<u>24,669</u>	<u>5,141</u>
<u>1966</u>						
United States	27,944	1,000	35,859	43,180	5,380	188
Mexico	180,773	42,110	5,700	-	29,730	6,608
Other	-	-	-	-	-	-
Total	<u>208,717</u>	<u>43,110</u>	<u>41,559</u>	<u>43,180</u>	<u>35,110</u>	<u>6,796</u>
<u>1967</u>						
United States	7,720	17,600	40,000	21,250	1,407	1,746
Mexico	357,681	22,317	-	-	42,931	2,536
Other	-	-	-	-	-	-
Total	<u>365,401</u>	<u>39,917</u>	<u>40,000</u>	<u>21,250</u>	<u>44,338</u>	<u>4,282</u>
<u>1968</u>						
United States	8,525	3,000	12,013	98,350	1,517	352
Mexico	327,091	6,100	-	-	40,016	972
Other	-	-	-	-	-	-
Total	<u>335,616</u>	<u>9,100</u>	<u>12,013</u>	<u>98,350</u>	<u>41,533</u>	<u>1,324</u>

Table 9
(Cont'd)

Cucumbers, Imports by Month and Region, Canada, March to June, 1962-68

Year & Origin	pounds -			dollars -		
	March	April	May	June	March-June	March-June
<u>1962</u>						
United States	886,054	535,142	658,822	3,619,246	5,699,264	369,159
Mexico	47,425	-	-	-	47,425	5,164
Other	550,085	164,500	47,990	-	762,575	53,784
Total	<u>1,483,564</u>	<u>699,642</u>	<u>706,812</u>	<u>3,619,246</u>	<u>6,509,264</u>	<u>428,107</u>
<u>1963</u>						
United States	629,622	460,181	1,240,397	2,928,977	5,259,177	301,412
Mexico	27,705	42,145	-	-	69,850	5,179
Other	704,375	-	-	-	704,375	59,982
Total	<u>1,361,702</u>	<u>502,326</u>	<u>1,240,397</u>	<u>2,928,977</u>	<u>6,033,402</u>	<u>366,573</u>
<u>1964</u>						
United States	161,687	473,684	1,087,008	2,247,183	3,969,562	247,464
Mexico	68,290	8,470	-	-	76,760	16,864
Other	159,587	170,120	66,925	14,000	410,632	55,459
Total	<u>389,564</u>	<u>652,274</u>	<u>1,153,933</u>	<u>2,261,183</u>	<u>4,456,954</u>	<u>319,787</u>
<u>1965</u>						
United States	176,585	218,819	928,165	2,610,801	3,934,370	214,687
Mexico	636,130	66,529	-	-	702,659	73,122
Other	371,368	93,100	-	-	464,468	46,859
Total	<u>1,184,083</u>	<u>378,448</u>	<u>928,165</u>	<u>2,610,801</u>	<u>5,101,497</u>	<u>334,668</u>
<u>1966</u>						
United States	193,366	739,967	1,460,466	3,599,208	5,993,007	453,093
Mexico	674,684	127,435	19,700	-	821,819	104,653
Other	532,522	11,000	-	-	543,522	26,773
Total	<u>1,400,572</u>	<u>878,402</u>	<u>1,480,166</u>	<u>3,599,208</u>	<u>7,358,348</u>	<u>584,519</u>
<u>1967</u>						
United States	88,139	306,545	1,258,793	2,537,607	4,191,084	277,284
Mexico	797,733	360,587	182,710	-	1,341,030	129,461
Other	433,534	59,940	-	-	493,474	52,127
Total	<u>1,319,406</u>	<u>727,072</u>	<u>1,441,503</u>	<u>2,537,607</u>	<u>6,025,588</u>	<u>458,872</u>
<u>1968</u>						
United States	93,464	114,011	1,033,316	3,693,725	4,934,516	315,037
Mexico	839,211	130,760	38,720	-	1,008,691	109,945
Other	-	-	-	-	-	-
Total	<u>932,675</u>	<u>244,771</u>	<u>1,072,036</u>	<u>3,693,725</u>	<u>5,943,207</u>	<u>424,982</u>

Table 10

Tomatoes, s.c. 91-90(a), Annual Imports, 1956-67

Tariff Item: 8724-1 (87(24))

Year	Total Imports		Unit Value \$/lb.	Dutiable Value \$'000	Duty Collected \$	Duty as p.c. of Dutiable
	'000 lb.	\$'000				Value p.c.
1. Total						
1956	171,537	11,147	.06	11,147	1,408,941	12.6
1957	149,502	10,712	.07	10,712	1,277,860	11.9
1958	138,458	11,048	.08	11,048	1,429,224	12.9
1959	156,487	10,168	.06	10,161	1,338,953	13.2
1960	155,891	12,065	.08	8,829	1,148,300	13.0
1961	162,756	11,654	.07	8,751	1,197,524	13.7
1962	160,349	12,318	.08	9,027	1,152,785	12.8
1963	169,145	13,914	.08	10,272	1,130,410	11.0
1964	168,560	16,342	.10	11,737	1,344,856	11.5
1965	170,689	17,665	.10	12,720	1,429,455	11.2
1966	185,497	18,864	.10	13,688	1,515,638	11.1
1967	192,822	18,910	.10	13,644	1,505,769	11.0
2. United States						
1956	143,170	9,104	.06	9,104	1,203,402	13.2
1957	101,624	8,051	.08	8,051	1,010,853	12.6
1958	85,013	5,860	.07	5,860	910,364	15.5
1959	92,487	6,595	.07	6,589	975,893	14.8
1960	78,094	6,829	.09	6,388	840,153	13.2
1961	106,784	8,839	.08	7,778	1,080,727	13.9
1962	101,556	9,132	.09	7,808	1,025,932	13.1
1963	114,948	10,189	.09	8,916	994,773	11.2
1964	115,179	11,625	.10	9,845	1,156,193	11.7
1965	113,509	11,631	.10	9,751	1,133,056	11.6
1966	117,628	12,431	.11	10,677	1,214,927	11.4
1967	114,764	11,916	.10	10,356	1,176,996	11.4
3. Cuba						
1956	109	16	.14	16	1,551	10.0
1957	169	27	.16	27	2,737	10.0
1958	30	7	.24	7	730	10.0
1959	38	5	.13	5	494	10.0
1960	1,404	174	.12	35	4,611	13.1
1961	4,919	371	.08	29	3,306	11.5
1962	1,521	157	.10	8	843	10.0
1963	110	14	.13	2	158	10.0
1964	286	45	.16	4	361	10.0
1965	602	71	.12	-	-	-
1966	447	46	.10	-	-	-
1967	1,531	95	.06	*	21	9.3

Table 10
(Cont'd)

<u>Year</u>	<u>Total Imports</u>		<u>Unit</u>	<u>Dutiable</u>	<u>Duty</u>	Duty as
	<u>'000 lb.</u>	<u>\$'000</u>	<u>Value</u>	<u>Value</u>	<u>Collected</u>	p.c. of
			<u>\$/lb.</u>	<u>\$'000</u>	<u>\$</u>	<u>Value</u>
						<u>p.c.</u>
<u>4. Mexico</u>						
1956	27,366	1,939	.07	1,939	194,606	10.0
1957	47,590	2,626	.06	2,626	263,456	10.0
1958	53,222	5,153	.10	5,153	515,261	10.0
1959	63,454	3,508	.06	3,507	356,513	10.2
1960	75,897	5,016	.07	2,360	296,589	12.6
1961	49,739	2,350	.05	931	111,707	12.0
1962	56,922	3,002	.05	1,210	126,010	10.4
1963	53,613	3,674	.07	1,354	135,479	10.0
1964	52,840	4,647	.09	1,870	186,419	10.0
1965	56,151	5,918	.11	2,958	295,354	10.0
1966	67,364	6,381	.09	3,005	300,152	10.0
1967	75,391	6,744	.09	3,135	313,127	10.0

5. Netherlands

1956-66	-	-	-	-	-	-
1967	1,131	154	.14	153	15,625	10.2

(a) Prior to 1964, s.c. 127

Tariff Item: 8724-1 (87(24))

Total Imports													
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total Year
						- thousand pounds -							
1956	9,189	10,766	7,191	13,889	19,119	19,489	13,710	4,066	21,086	34,134	9,926	8,972	171,537
1957	12,835	11,534	15,770	14,642	18,680	17,599	17,480	4,994	4,408	10,591	9,664	11,306	149,502
1958	10,035	9,643	12,440	12,210	16,685	22,147	14,462	4,447	4,968	11,914	9,455	10,051	138,458
1959	11,192	11,410	15,168	17,211	19,139	25,088	12,393	7,228	6,141	10,322	10,805	10,391	156,487
1960	11,149	12,558	15,160	17,943	17,802	24,399	15,237	6,908	4,046	7,999	9,383	13,306	155,891
1961	12,952	14,335	16,306	17,438	20,616	22,610	17,752	5,362	3,327	9,376	9,798	12,884	162,756
						- thousand dollars -							
1956	713	868	957	1,047	1,019	1,692	1,404	324	479	1,098	718	828	11,147
1957	606	494	852	1,065	1,867	1,510	1,514	311	234	623	755	881	10,712
1958	929	980	1,140	1,386	1,611	1,378	1,083	290	252	657	653	690	11,048
1959	843	663	693	801	1,247	1,652	914	459	356	712	836	992	10,168
1960	786	1,006	1,291	1,277	1,136	2,033	1,606	472	222	491	654	1,091	12,065
1961	672	896	979	1,077	1,294	1,621	2,175	410	208	577	809	968	11,654
						- cents per pound -							
1956	.078	.081	.133	.075	.053	.087	.102	.080	.023	.032	.072	.092	.065
1957	.047	.043	.054	.073	.100	.086	.087	.062	.053	.059	.078	.078	.072
1958	.093	.102	.092	.114	.097	.062	.075	.065	.051	.055	.069	.069	.080
1959	.075	.058	.046	.047	.065	.066	.074	.064	.058	.069	.077	.095	.065
1960	.071	.080	.085	.071	.064	.083	.105	.068	.055	.061	.070	.082	.077
1961	.052	.063	.060	.062	.063	.072	.122	.076	.062	.062	.083	.075	.072

Total Imports (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
	- thousand pounds -												
1962	14,042	12,717	16,918	18,681	21,172	21,653	13,545	5,867	4,127	10,684	10,350	10,593	160,349
1963	12,636	12,015	15,902	20,041	20,965	19,810	18,865	6,946	6,530	15,702	7,155	12,579	169,145
1964	13,692	13,480	14,020	17,432	20,806	20,311	16,907	8,276	6,530	12,727	9,960	14,419	168,560
1965	12,640	15,552	17,917	17,318	21,264	20,890	16,410	8,610	5,644	10,138	11,567	12,739	170,689
1966	14,319	15,746	20,599	19,483	20,879	23,353	18,300	11,894	7,354	8,546	11,603	13,422	185,497
1967	15,658	14,719	20,085	22,592	23,973	20,974	19,885	6,700	5,744	12,717	14,897	14,878	192,822
1968	15,761	15,548	19,248	17,837	21,042	20,539	23,430						
	- thousand dollars -												
1962	1,081	814	1,046	981	1,655	1,898	1,582	437	218	634	855	1,117	12,318
1963	1,383	1,200	1,150	1,178	1,761	1,836	1,989	543	321	618	697	1,239	13,914
1964	1,137	1,249	1,523	1,896	2,001	2,265	1,950	684	364	733	943	1,596	16,342
1965	1,021	1,168	1,955	2,063	2,600	2,052	1,845	761	435	788	1,318	1,659	17,665
1966	1,302	1,623	1,719	2,117	2,027	2,463	2,310	1,205	502	669	1,128	1,800	18,864
1967	1,561	1,303	1,701	2,112	2,334	2,373	2,777	1,002	407	910	1,113	1,318	18,910
1968	1,796	1,921	2,479	2,975	2,685	1,940	2,822						
	- cents per pound -												
1962	.077	.064	.062	.053	.078	.088	.117	.074	.053	.059	.083	.105	.077
1963	.109	.100	.072	.059	.084	.093	.105	.078	.049	.039	.097	.098	.082
1964	.083	.093	.109	.109	.096	.112	.115	.083	.056	.058	.095	.111	.097
1965	.081	.075	.109	.119	.122	.098	.112	.088	.077	.078	.114	.130	.103
1966	.091	.103	.083	.109	.097	.105	.126	.101	.068	.078	.097	.134	.102
1967	.100	.089	.085	.093	.098	.113	.140	.150	.071	.072	.075	.089	.098
1968	.114	.124	.129	.167	.128	.094	.120						

Table 11
(Cont'd)

Imports from U.S.A.

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
	- thousand pounds -												
1956	6,918	2,390	3,736	11,534	10,834	18,475	13,685	4,066	21,086	34,134	9,909	6,403	143,170
1957	3,313	4,150	2,901	3,712	13,859	17,493	17,480	4,994	4,408	10,591	9,664	9,058	101,624
1958	2,224	590	469	284	5,378	21,807	14,462	4,447	4,968	11,914	9,455	9,015	85,013
1959	3,794	1,956	1,217	770	9,858	24,978	12,393	7,175	6,141	10,322	10,696	3,189	92,487
1960	1,433	1,615	1,104	1,537	3,426	22,325	15,218	6,908	4,046	7,824	9,232	3,425	78,094
1961	4,075	4,131	3,352	4,567	11,555	22,155	17,752	5,362	3,327	9,351	9,706	11,452	106,784
	- thousand dollars -												
1956	502	218	515	890	687	1,651	1,401	324	479	1,098	716	621	9,104
1957	204	201	191	344	1,459	1,503	1,514	311	234	623	755	710	8,051
1958	206	88	81	51	521	1,359	1,083	290	252	657	653	620	5,860
1959	288	138	87	75	768	1,646	914	455	356	712	825	330	6,595
1960	147	185	138	179	398	1,910	1,604	472	222	475	641	458	6,829
1961	304	345	265	400	883	1,594	2,175	410	208	576	801	879	8,839
	- cents per pound -												
1956	.073	.091	.138	.077	.063	.089	.102	.080	.023	.032	.072	.097	.064
1957	.062	.048	.066	.093	.105	.086	.087	.062	.053	.059	.078	.078	.079
1958	.093	.149	.173	.179	.097	.062	.075	.065	.051	.055	.069	.069	.069
1959	.076	.071	.072	.098	.078	.066	.074	.063	.058	.069	.077	.103	.071
1960	.102	.115	.125	.116	.116	.086	.105	.068	.055	.061	.069	.134	.087
1961	.075	.084	.079	.087	.076	.072	.122	.076	.062	.062	.083	.077	.083

Imports from U.S.A. (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
	- thousand pounds -												
1962	6,113	3,849	4,815	4,207	9,094	20,205	13,545	5,867	4,127	10,684	10,350	8,699	101,556
1963	4,882	1,694	5,374	6,543	11,351	19,176	18,865	6,946	6,530	15,702	7,155	10,732	114,948
1964	8,355	3,520	4,080	5,000	10,844	16,663	16,669	8,276	6,530	12,727	9,953	12,562	115,179
1965	8,792	6,786	4,756	4,410	9,328	16,911	16,076	8,610	5,644	10,138	11,155	10,903	113,509
1966	10,125	5,289	3,826	2,325	8,559	18,111	18,246	11,894	7,354	8,546	11,603	11,750	117,628
1967	8,993	5,514	4,085	4,816	8,722	12,707	16,365	6,025	5,632	12,716	14,897	14,290	114,764
1968	9,260	3,388	4,104	5,455	10,166	12,907	22,297						
	- thousand dollars -												
1962	515	335	410	410	971	1,822	1,582	437	218	634	855	944	9,132
1963	660	245	481	571	1,170	1,796	1,989	543	321	618	697	1,098	10,189
1964	764	477	536	687	1,124	1,968	1,923	684	364	733	943	1,421	11,625
1965	734	545	615	550	1,123	1,612	1,801	761	435	788	1,260	1,406	11,631
1966	902	558	418	344	863	2,009	2,306	1,205	502	669	1,128	1,529	12,431
1967	908	507	353	542	984	1,609	2,440	916	393	910	1,113	1,242	11,916
1968	1,007	469	565	996	1,208	1,343	2,684						
	- cents per pound -												
1962	.084	.037	.085	.097	.107	.090	.117	.074	.053	.059	.083	.108	.090
1963	.135	.145	.089	.087	.103	.094	.105	.078	.049	.039	.097	.102	.089
1964	.091	.135	.131	.137	.104	.118	.115	.083	.056	.058	.095	.113	.101
1965	.034	.080	.129	.125	.120	.095	.112	.088	.077	.078	.113	.129	.102
1966	.089	.105	.109	.148	.101	.111	.126	.101	.068	.078	.097	.130	.106
1967	.101	.092	.086	.113	.113	.127	.149	.152	.070	.072	.075	.087	.104
1968	.109	.138	.138	.183	.119	.104	.120						

Table 11
(Cont'd)Imports from Mexico

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
							- thousand pounds -						
1956	2,016	8,041	3,298	2,354	8,285	1,014	25	-	-	-	-	2,333	27,366
1957	9,445	7,312	12,766	10,893	4,820	106	-	-	-	-	-	2,248	47,590
1958	7,780	8,889	11,959	11,926	11,307	325	-	-	-	-	-	1,036	53,222
1959	7,108	9,226	13,922	16,442	9,281	111	-	53	-	-	109	7,202	63,454
1960	9,716	10,759	13,305	16,004	14,341	2,074	19	-	-	-	-	9,679	75,897
1961	8,204	7,839	10,534	12,315	8,893	455	-	-	-	-	66	1,432	49,739
							- thousand dollars -						
1956	185	622	413	157	331	41	3	-	-	-	-	187	1,939
1957	398	284	645	715	407	7	-	-	-	-	-	171	2,626
1958	716	867	1,056	1,335	1,091	17	-	-	-	-	-	71	5,153
1959	525	493	602	725	479	6	-	4	-	-	11	662	3,508
1960	639	795	1,060	1,041	734	123	2	-	-	-	-	619	5,016
1961	335	394	506	626	398	27	-	-	-	-	5	88	2,350
							- cents per pound -						
1956	.092	.077	.125	.067	.040	.040	.139	-	-	-	-	.080	.071
1957	.042	.039	.051	.066	.085	.063	-	-	-	-	-	.076	.055
1958	.092	.098	.088	.112	.096	.054	-	-	-	-	-	.068	.097
1959	.074	.053	.043	.044	.052	.055	-	.078	-	-	.100	.092	.055
1960	.066	.074	.080	.065	.051	.059	.114	-	-	-	-	.064	.066
1961	.041	.050	.048	.051	.045	.059	-	-	-	-	.082	.062	.047

Table 11
(Cont'd)

Imports from Mexico (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
	- thousand pounds -												
1962	6,938	8,388	11,854	14,393	12,009	1,448	-	-	-	-	-	1,894	56,922
1963	7,315	10,213	10,501	13,498	9,614	634	-	-	-	-	-	1,837	53,613
1964	5,288	9,809	9,856	12,368	9,948	3,648	238	-	-	-	7	1,679	52,840
1965	3,824	8,583	12,825	12,461	11,935	3,979	332	-	-	-	412	1,800	56,151
1966	4,137	10,395	16,389	17,158	12,320	5,242	52	-	-	-	-	1,671	67,364
1967	6,237	8,362	15,736	17,776	15,249	8,266	3,033	143	-	*	-	588	75,391
1968	6,471	12,160	15,096	12,381	10,863	7,627	942	-	-	-	-	-	-
	- thousand dollars -												
1962	464	428	612	568	681	76	-	-	-	-	-	173	3,002
1963	688	944	665	606	592	40	-	-	-	-	-	139	3,674
1964	364	748	975	1,204	874	296	27	-	-	-	1	158	4,647
1965	285	606	1,298	1,462	1,476	440	43	-	-	-	58	250	5,918
1966	394	1,061	1,260	1,773	1,164	455	3	-	-	-	-	271	6,381
1967	641	743	1,317	1,570	1,350	763	270	14	-	*	-	76	6,744
1968	787	1,452	1,911	1,979	1,474	596	112	-	-	-	-	-	-
	- cents per pound -												
1962	.067	.051	.052	.039	.057	.053	-	-	-	-	-	.091	.053
1963	.094	.092	.063	.045	.062	.063	-	-	-	-	-	.076	.069
1964	.069	.076	.099	.097	.088	.081	.115	-	-	-	.107	.094	.088
1965	.075	.071	.101	.117	.124	.111	.130	-	-	-	.141	.139	.105
1966	.095	.102	.077	.103	.094	.087	.064	-	-	-	-	.162	.095
1967	.103	.089	.084	.088	.089	.092	.089	.094	-	-	-	.129	.089
1968	.122	.119	.127	.160	.136	.078	.119	-	-	.242	-	-	-

Table 11
(Cont'd)Imports from Other Countries

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
								- thousand pounds -					
1956	255	335	157	1	-	-	-	-	-	-	17	236	1,001
1957	76	73	103	37	-	-	-	-	-	-	-	-	288
1958	32	164	11	*	-	15	-	-	-	-	-	-	222
1959	289	228	29	-	-	-	-	-	-	-	-	-	546
1960	-	184	751	402	35	-	-	-	-	175	151	202	1,900
1961	672	2,365	2,420	555	169	-	-	-	-	26	26	-	6,233
								- thousand dollars -					
1956	25	28	28	*	-	-	-	-	-	-	1	20	103
1957	5	9	16	5	-	-	-	-	-	-	-	-	36
1958	7	25	3	*	-	1	-	-	-	-	-	-	36
1959	30	31	4	-	-	-	-	-	-	-	-	-	65
1960	-	25	92	57	3	-	-	-	-	16	13	14	220
1961	33	157	208	51	12	-	-	-	-	2	2	-	465
								- cents per pound -					
1956	.100	.085	.178	.275	-	-	-	-	-	-	.086	.084	.103
1957	.062	.130	.156	.142	-	-	-	-	-	-	-	-	.123
1958	.221	.155	.239	.340	-	.056	-	-	-	-	-	-	.162
1959	.104	.137	.140	-	-	-	-	-	-	-	-	-	.120
1960	-	.137	.122	.141	.088	-	-	-	-	.091	.089	.067	.116
1961	.049	.067	.086	.092	.072	-	-	-	-	.064	.077	-	.075

Imports from Other Countries (Cont'd)

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Total Year</u>
						- thousand pounds -							
1962	991	479	249	81	70	-	-	-	-	-	-	-	1,870
1963	439	108	27	-	-	-	-	-	-	-	-	9	583
1964	49	150	84	64	15	-	-	-	-	-	-	178	541
1965	24	183	337	447	-	-	2	-	-	-	-	37	1,029
1966	56	62	385	1	-	-	-	-	-	-	-	-	503
1967	428	843	263	-	2	-	487	532	112	-	-	-	2,668
1968	30	-	48	-	13	5	191	-	-	-	-	-	
						- thousand dollars -							
1962	101	51	24	4	3	-	-	-	-	-	-	-	184
1963	34	11	4	-	-	-	-	-	-	-	-	2	51
1964	9	24	12	5	2	-	-	-	-	-	-	17	70
1965	1	18	42	51	-	-	-	-	-	-	-	4	116
1966	6	5	41	*	-	-	*	-	-	-	-	-	51
1967	12	53	31	-	*	-	68	73	14	-	-	-	250
1968	2	-	3	-	3	1	26	-	-	-	-	-	
						- cents per pound -							
1962	.102	.106	.098	.044	.049	-	-	-	-	-	-	-	.098
1963	.078	.100	.149	-	-	-	-	-	-	-	-	.174	.087
1964	.182	.159	.147	.080	.158	-	-	-	-	-	-	.097	.130
1965	.058	.098	.125	.114	-	-	.152	-	-	-	-	.097	.113
1966	.100	.078	.106	.170	-	-	-	-	-	-	-	-	.102
1967	.028	.062	.117	-	.093	-	.139	.137	.122	-	-	-	.094
1968	.068	-	.062	-	.230	.189	.136	-	-	-	-	-	

(a) Prior to 1964, s.o. 127

Table 12
Tomatoes, Imports by Month and Region, Atlantic Provinces, April to June, 1962-68

Year & Origin	April	May	June	Apr.-June	April	May	June	Apr.-June
			- pounds -			- dollars -		
<u>1962</u>								
United States	271, 128	788, 395	1, 137, 523	2, 197, 046	30, 307	78, 653	93, 385	202, 345
Mexico	463, 046	426, 600	-	889, 646	14, 083	22, 987	-	37, 070
Other	81, 360	46, 560	-	127, 920	3, 544	2, 112	-	5, 656
Total	<u>815, 534</u>	<u>1, 261, 555</u>	<u>1, 137, 523</u>	<u>3, 214, 612</u>	<u>47, 934</u>	<u>103, 752</u>	<u>93, 385</u>	<u>245, 071</u>
<u>1963</u>								
United States	661, 166	841, 643	949, 514	2, 452, 323	56, 885	72, 453	87, 155	216, 493
Mexico	390, 708	288, 938	-	679, 646	14, 603	16, 202	-	30, 805
Other	-	-	-	-	-	-	-	-
Total	<u>1, 051, 874</u>	<u>1, 130, 581</u>	<u>949, 514</u>	<u>3, 131, 969</u>	<u>71, 488</u>	<u>88, 655</u>	<u>87, 155</u>	<u>247, 298</u>
<u>1964</u>								
United States	573, 751	744, 943	1, 093, 896	2, 412, 590	72, 842	70, 874	116, 976	260, 692
Mexico	295, 112	142, 081	45, 600	482, 793	18, 868	6, 456	1, 814	27, 138
Other	-	710	-	710	-	145	-	145
Total	<u>868, 863</u>	<u>887, 734</u>	<u>1, 139, 496</u>	<u>2, 896, 093</u>	<u>91, 710</u>	<u>77, 475</u>	<u>118, 790</u>	<u>287, 975</u>
<u>1965</u>								
United States	653, 748	843, 944	955, 062	2, 452, 754	76, 684	101, 599	85, 884	264, 167
Mexico	85, 150	250, 681	39, 600	375, 431	6, 245	21, 432	3, 938	31, 615
Other	91, 344	-	-	91, 344	12, 332	-	-	12, 332
Total	<u>830, 242</u>	<u>1, 094, 625</u>	<u>994, 662</u>	<u>2, 919, 529</u>	<u>95, 261</u>	<u>123, 031</u>	<u>89, 822</u>	<u>308, 114</u>
<u>1966</u>								
United States	438, 536	829, 631	1, 085, 954	2, 354, 121	68, 063	88, 365	119, 267	275, 695
Mexico	698, 017	162, 748	42, 300	903, 065	63, 413	12, 486	2, 625	78, 524
Other	500	-	-	500	85	-	-	85
Total	<u>1, 137, 053</u>	<u>992, 379</u>	<u>1, 128, 254</u>	<u>3, 257, 686</u>	<u>131, 561</u>	<u>100, 851</u>	<u>121, 892</u>	<u>354, 304</u>
<u>1967</u>								
United States	788, 982	1, 046, 813	895, 620	2, 731, 415	87, 233	130, 171	120, 956	338, 360
Mexico	71, 467	132, 256	179, 640	383, 363	3, 888	10, 605	10, 558	25, 051
Other	-	2, 431	-	2, 431	-	227	-	227
Total	<u>860, 449</u>	<u>1, 181, 500</u>	<u>1, 075, 260</u>	<u>3, 117, 209</u>	<u>91, 121</u>	<u>141, 003</u>	<u>131, 514</u>	<u>363, 638</u>
<u>1968</u>								
United States	712, 259	740, 745	881, 543	2, 334, 547	135, 729	119, 232	106, 786	361, 747
Mexico	115, 680	43, 470	203, 850	363, 000	17, 788	5, 660	14, 667	38, 115
Other	-	-	-	-	-	-	-	-
Total	<u>827, 939</u>	<u>784, 215</u>	<u>1, 085, 393</u>	<u>2, 697, 547</u>	<u>153, 517</u>	<u>124, 892</u>	<u>121, 453</u>	<u>399, 862</u>

Tomatoes, Imports by Month and Region, Quebec, April to June, 1962-68

Table 12
(Cont'd)

Year & Origin	pounds -			dollars -		
	April	May	June	April	May	June
<u>1962</u>						
United States	1,770,949	4,163,156	8,716,898	161,294	433,035	827,934
Mexico	4,778,409	3,642,430	632,312	178,113	186,249	28,744
Other	-	20,492	-	-	1,157	-
Total	<u>6,549,358</u>	<u>7,826,078</u>	<u>9,349,210</u>	<u>339,407</u>	<u>620,441</u>	<u>856,678</u>
<u>1963</u>						
United States	3,040,343	5,821,298	8,998,445	266,719	637,097	924,365
Mexico	3,700,957	2,711,553	29,643	153,520	166,082	1,435
Other	-	-	-	-	-	-
Total	<u>6,741,300</u>	<u>8,532,851</u>	<u>9,028,088</u>	<u>420,239</u>	<u>803,179</u>	<u>925,800</u>
<u>1964</u>						
United States	3,035,167	4,875,038	7,355,202	417,266	561,076	998,114
Mexico	3,269,271	3,338,351	1,589,752	258,926	297,965	145,168
Other	23,899	-	-	2,682	-	-
Total	<u>6,328,337</u>	<u>8,213,389</u>	<u>8,944,954</u>	<u>678,874</u>	<u>859,041</u>	<u>1,143,282</u>
<u>1965</u>						
United States	2,201,004	3,475,943	6,513,485	272,440	391,004	668,894
Mexico	3,971,909	4,580,358	2,137,842	480,583	604,087	259,621
Other	112,304	-	-	10,863	-	-
Total	<u>6,285,217</u>	<u>8,056,301</u>	<u>8,651,327</u>	<u>763,886</u>	<u>995,091</u>	<u>928,515</u>
<u>1966</u>						
United States	678,582	3,156,428	7,175,726	123,850	336,511	893,085
Mexico	5,487,584	4,094,201	3,218,211	486,663	390,626	246,225
Other	-	-	-	-	-	-
Total	<u>6,166,166</u>	<u>7,250,629</u>	<u>10,393,937</u>	<u>610,513</u>	<u>727,137</u>	<u>1,139,310</u>
<u>1967</u>						
United States	1,653,763	2,773,822	4,019,400	200,889	362,056	594,507
Mexico	8,595,028	3,820,511	4,108,006	708,723	321,312	359,195
Other	-	-	-	-	-	-
Total	<u>10,248,791</u>	<u>6,594,333</u>	<u>8,127,406</u>	<u>909,612</u>	<u>683,368</u>	<u>953,702</u>
<u>1968</u>						
United States	2,162,121	4,758,924	6,039,028	452,354	505,382	605,693
Mexico	3,775,930	3,611,106	1,627,037	568,857	484,283	114,016
Other	-	13,023	5,280	-	3,186	975
Total	<u>5,938,051</u>	<u>8,383,053</u>	<u>7,671,345</u>	<u>1,021,211</u>	<u>992,851</u>	<u>720,684</u>
						<u>2,734,746</u>

Tomatoes, Imports by Month and Region, Ontario, April to June, 1962-68

180

Year & Origin	- pounds -			- dollars -		
	April	May	June	April	May	June
1962						
United States	1,897,184	3,152,676	6,618,892	186,551	346,451	564,402
Mexico	4,047,046	3,291,863	182,050	158,220	185,460	9,862
Other	-	2,640	-	-	150	-
Total	<u>5,944,230</u>	<u>6,447,179</u>	<u>6,800,942</u>	<u>344,771</u>	<u>532,061</u>	<u>574,264</u>
1963						
United States	2,359,310	3,309,018	5,445,625	213,750	326,715	423,559
Mexico	4,004,930	2,629,989	30,988	176,755	166,082	1,640
Other	-	-	-	-	-	-
Total	<u>6,364,240</u>	<u>5,939,007</u>	<u>5,476,613</u>	<u>390,505</u>	<u>492,797</u>	<u>425,199</u>
1964						
United States	1,140,170	3,753,001	4,743,015	155,062	332,759	444,253
Mexico	4,973,326	2,323,666	624,061	506,582	190,598	31,517
Other	12,203	5,931	-	1,097	1,097	-
Total	<u>6,125,699</u>	<u>6,082,598</u>	<u>5,367,076</u>	<u>662,741</u>	<u>524,454</u>	<u>475,770</u>
1965						
United States	1,285,053	3,447,642	5,645,636	157,515	406,339	459,179
Mexico	4,461,587	2,750,983	870,583	515,249	328,934	80,794
Other	243,666	-	-	27,905	-	-
Total	<u>5,990,306</u>	<u>6,198,625</u>	<u>6,516,219</u>	<u>700,669</u>	<u>735,273</u>	<u>539,973</u>
1966						
United States	768,202	2,890,367	5,988,535	90,316	257,485	561,545
Mexico	5,727,580	3,969,092	473,144	614,390	360,698	35,589
Other	-	-	-	-	-	-
Total	<u>6,495,782</u>	<u>6,859,459</u>	<u>6,461,679</u>	<u>704,706</u>	<u>618,183</u>	<u>597,134</u>
1967						
United States	2,167,511	3,764,948	4,816,919	230,322	364,535	518,606
Mexico	4,706,832	5,028,332	1,031,432	434,990	434,903	85,405
Other	-	-	-	-	-	-
Total	<u>6,874,343</u>	<u>8,793,280</u>	<u>5,848,351</u>	<u>665,312</u>	<u>799,438</u>	<u>604,011</u>
1968						
United States	1,472,079	3,327,034	3,510,245	273,069	452,619	356,410
Mexico	4,202,880	3,093,897	2,341,615	669,482	433,717	171,374
Other	-	-	-	-	-	-
Total	<u>5,674,959</u>	<u>6,420,931</u>	<u>5,851,860</u>	<u>942,551</u>	<u>886,336</u>	<u>527,784</u>

1,097,404
353,542
150
1,451,096
964,024
344,477
-
1,308,501
932,074
728,697
2,194
1,662,965
1,023,033
924,977
27,905
1,975,915
909,346
1,010,677
-
1,920,023
1,113,463
955,298
-
2,068,761
1,082,098
1,274,573
-
2,356,671

Tomatoes, Imports by Month and Region, Prairie Provinces, April to June, 1962-68

Year & Origin	April	May	June	Apr. - June	April	May	June	Apr. - June
			- pounds -				- dollars -	
<u>1962</u>								
United States	227,147	751,103	2,829,665	3,807,915	23,258	87,190	256,136	366,584
Mexico	3,155,573	2,704,587	381,684	6,241,844	148,125	174,203	22,782	345,110
Other	-	-	-	-	-	-	-	-
Total	<u>3,382,720</u>	<u>3,455,690</u>	<u>3,211,349</u>	<u>10,049,759</u>	<u>171,383</u>	<u>261,393</u>	<u>278,918</u>	<u>711,694</u>
<u>1963</u>								
United States	238,091	998,258	2,803,450	4,039,799	18,160	99,599	263,534	381,293
Mexico	3,332,150	2,392,985	419,668	6,144,803	172,278	172,895	32,196	377,369
Other	-	-	-	-	-	-	-	-
Total	<u>3,570,241</u>	<u>3,391,243</u>	<u>3,223,118</u>	<u>10,184,602</u>	<u>190,438</u>	<u>272,494</u>	<u>295,730</u>	<u>758,662</u>
<u>1964</u>								
United States	205,710	1,326,255	2,633,175	4,165,140	31,685	143,129	316,806	491,620
Mexico	2,307,431	2,338,821	810,631	5,456,883	287,618	244,481	79,258	611,357
Other	-	-	-	-	-	-	-	-
Total	<u>2,513,141</u>	<u>3,665,076</u>	<u>3,443,806</u>	<u>9,622,023</u>	<u>319,303</u>	<u>387,610</u>	<u>396,064</u>	<u>1,102,977</u>
<u>1965</u>								
United States	210,044	1,328,419	2,594,184	4,132,647	31,060	192,057	278,558	501,675
Mexico	2,390,857	2,449,318	662,144	5,502,319	297,050	327,862	79,511	704,423
Other	-	-	-	-	-	-	-	-
Total	<u>2,600,901</u>	<u>3,777,737</u>	<u>3,256,328</u>	<u>9,634,966</u>	<u>328,110</u>	<u>519,919</u>	<u>358,069</u>	<u>1,206,098</u>
<u>1966</u>								
United States	272,234	1,491,211	2,532,542	4,295,987	38,968	157,024	287,729	483,721
Mexico	3,337,176	2,172,924	939,951	6,450,051	409,939	233,629	114,996	758,564
Other	-	-	-	-	-	-	-	-
Total	<u>3,609,410</u>	<u>3,664,135</u>	<u>3,472,493</u>	<u>10,746,038</u>	<u>448,907</u>	<u>390,653</u>	<u>402,725</u>	<u>1,242,285</u>
<u>1967</u>								
United States	78,618	644,149	2,007,547	2,730,314	11,267	77,270	270,561	359,098
Mexico	2,677,877	4,021,309	1,783,711	8,482,897	279,129	389,481	195,899	864,509
Other	-	-	-	-	-	-	-	-
Total	<u>2,756,495</u>	<u>4,665,458</u>	<u>3,791,258</u>	<u>11,213,211</u>	<u>290,396</u>	<u>466,751</u>	<u>466,460</u>	<u>1,223,607</u>
<u>1968</u>								
United States	479,486	468,160	1,791,938	2,739,584	83,319	65,262	207,731	356,312
Mexico	2,673,138	2,747,213	1,935,935	7,356,286	454,184	373,691	169,367	997,242
Other	-	-	-	-	-	-	-	-
Total	<u>3,152,624</u>	<u>3,215,373</u>	<u>3,727,873</u>	<u>10,095,870</u>	<u>537,503</u>	<u>438,953</u>	<u>377,098</u>	<u>1,353,554</u>

Table 12
(Cont'd)

Tomatoes, Imports by Month and Region, British Columbia, April to June, 1962-68

Year & Origin	- pounds -			- dollars -		
	April	May	June	April	May	June
1962						
United States	40,775	238,658	901,933	8,151	25,187	80,503
Mexico	1,948,427	1,943,029	251,620	69,553	111,984	14,708
Other	-	-	-	-	-	-
Total	<u>1,989,202</u>	<u>2,181,687</u>	<u>1,153,553</u>	<u>77,704</u>	<u>137,171</u>	<u>95,211</u>
						<u>310,086</u>
1963						
United States	243,946	380,727	978,821	15,919	33,764	96,991
Mexico	2,069,234	1,590,557	153,944	89,148	95,895	4,715
Other	-	-	-	-	-	-
Total	<u>2,313,180</u>	<u>1,971,284</u>	<u>1,132,765</u>	<u>105,067</u>	<u>129,659</u>	<u>101,706</u>
						<u>336,432</u>
1964						
United States	44,884	144,481	837,696	10,013	16,184	92,347
Mexico	1,523,258	1,804,638	577,486	131,786	134,996	38,454
Other	28,026	8,000	-	1,356	1,074	-
Total	<u>1,596,168</u>	<u>1,957,112</u>	<u>1,415,182</u>	<u>143,155</u>	<u>152,254</u>	<u>130,801</u>
						<u>426,210</u>
1965						
United States	60,336	232,313	1,202,536	12,131	32,344	119,486
Mexico	1,551,390	1,903,937	268,933	162,717	193,908	16,207
Other	-	-	-	-	-	-
Total	<u>1,611,726</u>	<u>2,136,250</u>	<u>1,471,469</u>	<u>174,848</u>	<u>226,252</u>	<u>135,692</u>
						<u>536,792</u>
1966						
United States	167,520	191,250	1,328,134	22,396	23,336	147,019
Mexico	1,907,515	1,921,285	568,320	198,935	166,545	55,199
Other	-	-	-	-	-	-
Total	<u>2,075,035</u>	<u>2,112,535</u>	<u>1,896,454</u>	<u>221,331</u>	<u>189,881</u>	<u>202,218</u>
						<u>613,430</u>
1967						
United States	127,083	492,469	967,996	12,499	49,662	104,655
Mexico	1,724,654	2,246,178	1,163,526	142,964	193,561	112,335
Other	-	-	-	-	-	-
Total	<u>1,851,737</u>	<u>2,738,647</u>	<u>2,131,522</u>	<u>155,463</u>	<u>243,223</u>	<u>216,990</u>
						<u>615,676</u>
1968						
United States	629,546	871,369	684,499	51,869	65,353	66,414
Mexico	1,613,849	1,367,273	1,518,228	268,339	176,273	126,224
Other	-	-	-	-	-	-
Total	<u>2,243,395</u>	<u>2,238,642</u>	<u>2,202,727</u>	<u>320,208</u>	<u>241,626</u>	<u>192,638</u>
						<u>754,472</u>

Tomatoes, Imports by Month and Region, Canada, April to June, 1962-68

Table 12
(Cont'd)

<u>Year & Origin</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Apr.-June</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>Apr.-June</u>
		- pounds -				- dollars -		
<u>1962</u>								
United States	4,207,183	9,093,988	20,204,911	33,506,082	409,561	970,516	1,822,360	3,202,437
Mexico	14,392,501	12,008,509	1,447,666	27,848,676	568,094	680,883	76,096	1,325,073
Other	81,360	69,692	-	151,052	3,544	3,419	-	6,963
Total	<u>18,681,044</u>	<u>21,172,189</u>	<u>21,652,577</u>	<u>61,505,810</u>	<u>981,199</u>	<u>1,654,818</u>	<u>1,898,456</u>	<u>4,534,473</u>
<u>1963</u>								
United States	6,542,856	11,350,944	19,175,855	37,069,655	571,433	1,169,628	1,795,604	3,536,665
Mexico	13,497,979	9,614,022	634,243	23,746,244	606,304	591,684	39,988	1,237,976
Other	-	-	-	-	-	-	-	-
Total	<u>20,040,835</u>	<u>20,964,966</u>	<u>19,810,098</u>	<u>60,815,899</u>	<u>1,177,737</u>	<u>1,761,312</u>	<u>1,835,592</u>	<u>4,774,641</u>
<u>1964</u>								
United States	4,999,682	10,843,718	16,662,984	32,506,384	686,868	1,124,022	1,968,496	3,779,386
Mexico	12,368,998	9,947,557	3,647,530	25,963,485	1,203,780	874,496	296,211	2,374,487
Other	64,128	14,641	-	78,769	5,135	2,316	-	7,451
Total	<u>17,432,208</u>	<u>20,805,916</u>	<u>20,310,514</u>	<u>58,548,638</u>	<u>1,895,783</u>	<u>2,000,834</u>	<u>2,264,707</u>	<u>6,161,224</u>
<u>1965</u>								
United States	4,410,185	9,328,261	16,910,903	30,649,349	549,830	1,123,343	1,612,001	3,285,174
Mexico	12,460,893	11,935,277	3,979,102	28,375,272	1,461,844	1,476,223	440,071	3,378,138
Other	447,314	-	-	447,314	51,100	-	-	51,100
Total	<u>17,318,392</u>	<u>21,263,538</u>	<u>20,890,005</u>	<u>59,471,935</u>	<u>2,062,774</u>	<u>2,599,566</u>	<u>2,052,072</u>	<u>6,714,412</u>
<u>1966</u>								
United States	2,325,074	8,558,887	18,110,891	28,994,852	343,593	862,721	2,008,645	3,214,959
Mexico	17,157,872	12,320,250	5,241,926	34,720,048	1,773,340	1,163,984	454,634	3,391,958
Other	500	-	-	500	85	-	-	85
Total	<u>19,483,446</u>	<u>20,879,137</u>	<u>23,352,817</u>	<u>63,715,400</u>	<u>2,117,018</u>	<u>2,026,705</u>	<u>2,463,279</u>	<u>6,607,002</u>
<u>1967</u>								
United States	4,815,957	8,722,201	12,707,482	26,245,640	542,210	983,694	1,609,285	3,135,189
Mexico	17,775,858	15,248,586	8,266,315	41,290,759	1,569,694	1,349,862	763,392	3,682,948
Other	-	2,431	-	2,431	-	227	-	227
Total	<u>22,591,815</u>	<u>23,973,218</u>	<u>20,973,797</u>	<u>67,538,830</u>	<u>2,111,904</u>	<u>2,333,783</u>	<u>2,372,677</u>	<u>6,818,364</u>
<u>1968</u>								
United States	5,455,491	10,166,232	12,907,253	28,528,976	996,340	1,207,848	1,343,034	3,547,222
Mexico	12,381,477	10,862,959	7,626,665	30,871,101	1,978,650	1,473,624	595,648	4,047,922
Other	-	13,023	5,280	18,303	-	3,186	975	4,161
Total	<u>17,836,968</u>	<u>21,042,214</u>	<u>20,539,198</u>	<u>59,418,380</u>	<u>2,974,990</u>	<u>2,684,658</u>	<u>1,939,657</u>	<u>7,599,305</u>

Table 13

Tomatoes, Imports by Month and Region, Atlantic Provinces, Oct. to Dec., 1962-67

Year & Origin	- pounds -			- dollars -		
	October	November	December	October	November	December
<u>1962</u>						
United States	888,608	761,679	719,190	77,466	68,275	81,873
Mexico	-	-	26,650	-	-	2,523
Other	-	-	-	-	-	-
Total	<u>888,608</u>	<u>761,679</u>	<u>745,840</u>	<u>77,466</u>	<u>68,275</u>	<u>84,396</u>
<u>1963</u>						
United States	627,097	429,288	592,770	45,639	45,845	66,590
Mexico	-	-	28,200	-	-	1,884
Other	-	-	-	-	-	-
Total	<u>627,097</u>	<u>429,288</u>	<u>620,970</u>	<u>45,639</u>	<u>45,845</u>	<u>68,474</u>
<u>1964</u>						
United States	680,177	562,135	792,199	50,106	62,460	85,103
Mexico	-	-	-	-	-	-
Other	-	-	-	-	-	-
Total	<u>680,177</u>	<u>562,135</u>	<u>792,199</u>	<u>50,106</u>	<u>62,460</u>	<u>85,103</u>
<u>1965</u>						
United States	808,279	613,775	729,975	66,996	70,785	96,958
Mexico	-	-	27,227	-	-	1,703
Other	-	-	-	-	-	-
Total	<u>808,279</u>	<u>613,775</u>	<u>757,202</u>	<u>66,996</u>	<u>70,785</u>	<u>98,661</u>
<u>1966</u>						
United States	949,118	490,652	579,931	79,034	59,249	98,988
Mexico	-	-	-	-	-	-
Other	-	-	-	-	-	-
Total	<u>949,118</u>	<u>490,652</u>	<u>579,931</u>	<u>79,034</u>	<u>59,249</u>	<u>98,988</u>
<u>1967</u>						
United States	619,222	757,953	705,435	60,407	63,419	66,519
Mexico	-	-	-	-	-	-
Other	-	-	-	-	-	-
Total	<u>619,222</u>	<u>757,953</u>	<u>705,435</u>	<u>60,407</u>	<u>63,419</u>	<u>66,519</u>

Table 13
(Cont'd)

Tomatoes, Imports by Month and Region, Quebec, Oct. to Dec., 1962-67

Year & Origin	October	November	December	Oct.-Dec.	October	November	December	Oct.-Dec.
		- pounds -				- dollars -		
<u>1962</u>								
United States	4,059,315	3,767,783	2,832,286	10,659,384	224,081	307,621	306,588	838,290
Mexico	-	-	578,923	578,923	-	-	50,092	50,092
Other	-	-	-	-	-	-	-	-
Total	<u>4,059,315</u>	<u>3,767,783</u>	<u>3,411,209</u>	<u>11,238,307</u>	<u>224,081</u>	<u>307,621</u>	<u>356,680</u>	<u>888,382</u>
<u>1963</u>								
United States	7,017,211	2,686,562	4,749,383	14,453,156	261,532	283,536	405,963	951,031
Mexico	-	-	604,266	604,266	-	-	41,928	41,928
Other	-	-	9,105	9,105	-	-	1,580	1,580
Total	<u>7,017,211</u>	<u>2,686,562</u>	<u>5,362,754</u>	<u>15,066,527</u>	<u>261,532</u>	<u>283,536</u>	<u>449,471</u>	<u>994,539</u>
<u>1964</u>								
United States	4,916,323	3,709,123	5,750,342	14,375,788	306,199	337,947	602,216	1,246,362
Mexico	-	-	284,393	284,393	-	-	20,502	20,502
Other	-	-	178,495	178,495	-	-	17,354	17,354
Total	<u>4,916,323</u>	<u>3,709,123</u>	<u>6,213,230</u>	<u>14,838,676</u>	<u>306,199</u>	<u>337,947</u>	<u>640,072</u>	<u>1,284,218</u>
<u>1965</u>								
United States	3,403,173	3,794,619	4,811,785	12,009,577	239,070	391,310	575,204	1,205,584
Mexico	-	176,000	88,266	264,266	-	25,322	10,826	36,148
Other	-	-	-	-	-	-	-	-
Total	<u>3,403,173</u>	<u>3,970,619</u>	<u>4,900,051</u>	<u>12,273,843</u>	<u>239,070</u>	<u>416,632</u>	<u>586,030</u>	<u>1,241,732</u>
<u>1966</u>								
United States	1,820,052	4,555,799	5,681,709	12,057,560	117,986	365,649	613,274	1,096,909
Mexico	-	-	77,140	77,140	-	-	10,358	10,358
Other	-	-	-	-	-	-	-	-
Total	<u>1,820,052</u>	<u>4,555,799</u>	<u>5,758,849</u>	<u>12,134,700</u>	<u>117,986</u>	<u>365,649</u>	<u>623,632</u>	<u>1,107,267</u>
<u>1967</u>								
United States	5,359,709	6,124,665	5,401,277	16,885,651	360,924	400,046	436,151	1,197,121
Mexico	-	-	43,600	43,600	-	-	5,101	5,101
Other	-	-	-	-	-	-	-	-
Total	<u>5,359,709</u>	<u>6,124,665</u>	<u>5,444,877</u>	<u>16,929,251</u>	<u>360,924</u>	<u>400,046</u>	<u>441,252</u>	<u>1,202,222</u>

Table 13
(Cont'd)

Tomatoes, Imports by Month and Region, Ontario, Oct. to Dec., 1962-67

Year & Origin	pounds -			dollars -		
	October	November	December	October	November	December
<u>1962</u>						
United States	2,069,088	2,310,605	2,705,923	7,085,616	193,176	295,516
Mexico	-	-	385,715	385,715	-	36,257
Other	-	-	-	-	-	-
Total	<u>2,069,088</u>	<u>2,310,605</u>	<u>3,091,638</u>	<u>7,471,331</u>	<u>193,176</u>	<u>331,773</u>
<u>1963</u>						
United States	5,205,855	1,763,059	2,980,391	9,949,305	142,771	301,419
Mexico	-	-	254,865	254,865	-	20,019
Other	-	-	-	-	-	-
Total	<u>5,205,855</u>	<u>1,763,059</u>	<u>3,235,256</u>	<u>10,204,170</u>	<u>142,771</u>	<u>321,438</u>
<u>1964</u>						
United States	3,273,538	2,158,956	3,669,957	9,102,451	176,778	396,738
Mexico	-	6,600	187,008	193,608	709	22,175
Other	-	-	-	-	-	-
Total	<u>3,273,538</u>	<u>2,165,556</u>	<u>3,856,965</u>	<u>9,296,059</u>	<u>177,487</u>	<u>418,913</u>
<u>1965</u>						
United States	2,359,750	2,838,682	3,546,898	8,745,330	335,333	433,538
Mexico	-	133,792	149,170	282,962	13,870	20,323
Other	-	-	36,531	36,531	-	3,561
Total	<u>2,359,750</u>	<u>2,972,474</u>	<u>3,732,599</u>	<u>9,064,823</u>	<u>349,203</u>	<u>457,422</u>
<u>1966</u>						
United States	2,256,625	2,891,835	3,327,120	8,475,580	286,484	452,698
Mexico	-	-	225,258	225,258	-	33,336
Other	-	-	-	-	-	-
Total	<u>2,256,625</u>	<u>2,891,835</u>	<u>3,552,378</u>	<u>8,700,838</u>	<u>286,484</u>	<u>486,034</u>
<u>1967</u>						
United States	2,721,414	3,904,079	4,255,969	10,881,462	274,636	359,496
Mexico	360	-	32,105	32,465	-	3,841
Other	-	-	-	-	-	-
Total	<u>2,721,774</u>	<u>3,904,079</u>	<u>4,288,074</u>	<u>10,913,927</u>	<u>274,636</u>	<u>363,337</u>

Oct.-Dec.

Table 13
(Cont'd)

Tomatoes, Imports by Month and Region, British Columbia, Oct. to Dec., 1962-67

Year & Origin	October	November	December	Oct.-Dec.	October	November	December	Oct.-Dec.
		- pounds				- dollars		
1962								
United States	1,398,207	1,302,081	552,625	3,252,913	80,996	103,471	52,515	236,982
Mexico	-	-	534,833	534,833	-	-	50,496	50,496
Other	-	-	-	-	-	-	-	-
Total	<u>1,398,207</u>	<u>1,302,081</u>	<u>1,087,458</u>	<u>3,787,746</u>	<u>80,996</u>	<u>103,471</u>	<u>103,011</u>	<u>287,478</u>
1963								
United States	1,358,127	910,062	789,155	3,057,344	82,495	85,402	94,682	262,579
Mexico	-	-	542,567	542,567	-	-	41,503	41,503
Other	-	-	-	-	-	-	-	-
Total	<u>1,358,127</u>	<u>910,062</u>	<u>1,331,722</u>	<u>3,599,911</u>	<u>82,495</u>	<u>85,402</u>	<u>136,185</u>	<u>304,082</u>
1964								
United States	1,540,407	1,377,664	591,921	3,509,992	82,970	140,610	93,334	316,914
Mexico	-	-	564,371	564,371	-	-	56,656	56,656
Other	-	-	-	-	-	-	-	-
Total	<u>1,540,407</u>	<u>1,377,664</u>	<u>1,156,292</u>	<u>4,074,363</u>	<u>82,970</u>	<u>140,610</u>	<u>149,990</u>	<u>373,570</u>
1965								
United States	1,268,469	1,798,390	291,284	3,358,143	97,159	191,719	49,635	338,513
Mexico	-	33,600	873,557	907,157	-	6,947	116,818	123,765
Other	-	-	-	-	-	-	-	-
Total	<u>1,268,469</u>	<u>1,831,990</u>	<u>1,164,841</u>	<u>4,265,300</u>	<u>97,159</u>	<u>198,666</u>	<u>166,453</u>	<u>462,278</u>
1966								
United States	1,725,749	1,679,505	805,053	4,210,307	138,907	158,091	135,742	432,740
Mexico	-	-	502,977	502,977	-	-	76,580	76,580
Other	-	-	-	-	-	-	-	-
Total	<u>1,725,749</u>	<u>1,679,505</u>	<u>1,308,030</u>	<u>4,713,284</u>	<u>138,907</u>	<u>158,091</u>	<u>212,322</u>	<u>509,320</u>
1967								
United States	1,881,300	1,866,141	1,362,534	5,109,975	141,460	142,952	115,982	400,394
Mexico	-	-	293,701	293,701	-	-	33,568	33,568
Other	-	-	-	-	-	-	-	-
Total	<u>1,881,300</u>	<u>1,866,141</u>	<u>1,656,235</u>	<u>5,403,676</u>	<u>141,460</u>	<u>142,952</u>	<u>149,550</u>	<u>433,962</u>

Table 13
(Cont'd)

Tomatoes, Imports by Month and Region, Canada, Oct. to Dec., 1962-67

Year & Origin	pounds -			dollars -		
	October	November	December	October	November	December
1962						
United States	10,683,969	10,350,038	8,698,936	29,732,943	854,804	943,818
Mexico	-	-	1,894,278	1,894,278	-	172,938
Other	-	-	-	-	-	-
Total	<u>10,683,969</u>	<u>10,350,038</u>	<u>10,593,214</u>	<u>31,627,221</u>	<u>854,804</u>	<u>2,605,948</u>
1963						
United States	15,701,740	7,154,726	10,732,290	33,588,756	697,496	1,098,205
Mexico	-	-	1,837,492	1,837,492	-	139,028
Other	-	-	9,105	9,105	-	1,580
Total	<u>15,701,740</u>	<u>7,154,726</u>	<u>12,578,887</u>	<u>35,435,352</u>	<u>697,496</u>	<u>2,554,044</u>
1964						
United States	12,726,875	9,952,930	12,561,527	35,241,332	942,726	1,421,382
Mexico	-	6,600	1,678,507	1,685,107	709	157,600
Other	-	-	178,495	178,495	-	17,354
Total	<u>12,726,875</u>	<u>9,959,530</u>	<u>14,418,529</u>	<u>37,104,934</u>	<u>943,435</u>	<u>3,273,172</u>
1965						
United States	10,137,663	11,155,262	10,902,639	32,195,564	1,259,665	1,405,987
Mexico	-	412,092	1,800,107	2,212,199	58,165	249,924
Other	-	-	36,531	36,531	-	3,561
Total	<u>10,137,663</u>	<u>11,567,354</u>	<u>12,739,277</u>	<u>34,444,294</u>	<u>1,317,830</u>	<u>3,765,663</u>
1966						
United States	8,545,617	11,602,898	11,750,306	31,898,821	1,127,501	1,528,768
Mexico	-	-	1,671,403	1,671,403	-	271,103
Other	-	-	-	-	-	-
Total	<u>8,545,617</u>	<u>11,602,898</u>	<u>13,421,709</u>	<u>33,570,224</u>	<u>1,127,501</u>	<u>3,596,702</u>
1967						
United States	12,716,398	14,897,085	14,289,982	41,903,465	1,112,523	1,241,833
Mexico	360	-	587,647	588,007	-	75,839
Other	-	-	-	-	-	-
Total	<u>12,716,758</u>	<u>14,897,085</u>	<u>14,877,629</u>	<u>42,491,472</u>	<u>1,112,523</u>	<u>3,340,037</u>

Table 15

Cucumber Unloads by Region and Origin, in carloads,
March to June, 1965 to 1968

Year & Region in Which unloaded	Domestic		Imported						Total		Total Domestic & Imported	
	Rail	Truck	Florida		California		Mexico		Others		Rail	Truck
			Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck		
<u>1965</u>												
Atlantic	6	10	-	6	-	-	-	-	-	-	6	16
Central	18	364	9	50	-	-	2	-	-	37	29	451
Prairies	15	61	-	2	-	3	-	3	-	11	15	72
British Columbia	-	47	-	1	-	3	1	-	-	4	1	51
Canada	32	482	9	59	-	6	3	3	-	40	51	590
<u>1966</u>												
Atlantic	5	5	-	5	-	-	-	-	-	2	5	12
Central	1	284	14	52	-	-	3	-	-	30	18	366
Prairies	24	63	-	1	-	1	-	4	-	-	24	69
British Columbia	-	39	-	1	1	5	1	8	-	-	2	53
Canada	30	391	14	59	1	6	4	12	-	32	42	500
<u>1967</u>												
Atlantic	2	7	-	11	-	-	-	-	-	1	2	19
Central	1	380	2	36	-	-	4	-	1	48	8	464
Prairies	25	71	-	-	-	-	2	-	-	5	25	78
British Columbia	1	48	1	-	-	5	1	2	-	-	3	62
Canada	29	506	3	47	-	5	5	11	1	54	38	623
<u>1968</u>												
Atlantic	2	9	-	9	-	-	-	-	-	2	2	20
Central	1	345	-	31	-	-	5	1	-	63	6	440
Prairies	17	73	-	3	-	1	-	1	-	-	17	78
British Columbia	-	53	1	-	-	2	-	5	-	-	1	60
Canada	20	480	1	43	-	3	5	7	-	65	26	598

Source: Canada Dept. of Agriculture, Annual Unload Report

Table 16

Cucumber Unloads by Rail and Truck, by Month, March to June, 1961-68

	1961			1962		
	Rail	Truck	Total	Rail	Truck	Total
- carloads -						
<u>March</u>						
Florida	3	10	13	13	39	52
California	-	-	-	-	-	-
Mexico	-	1	1	-	-	-
Other	-	6	6	-	-	-
Imported	3	17	20	13	39	52
Domestic	7	28	35	7	26	33
Total	10	45	55	20	65	85
<u>April</u>						
Florida	-	21	21	1	7	8
California	-	-	-	-	1	1
Mexico	-	-	-	-	-	-
Other	-	1	1	-	1	1
Imported	-	22	22	1	9	10
Domestic	4	80	84	6	60	66
Total	4	102	106	7	69	76
<u>May</u>						
Florida	7	20	27	2	17	19
California	-	3	3	-	1	1
Mexico	-	-	-	-	-	-
Other	-	6	6	-	3	3
Imported	7	29	36	2	21	23
Domestic	7	94	101	12	87	99
Total	14	123	137	14	108	122
<u>June</u>						
Florida	-	7	7	2	29	31
California	-	3	3	-	3	3
Mexico	-	-	-	-	-	-
Other	-	31	31	-	39	39
Imported	-	41	41	2	71	73
Domestic	13	129	142	6	118	124
Total	13	170	183	8	189	197
<u>March-June</u>						
Florida	10	58	68	18	92	110
California	-	6	6	-	5	5
Mexico	-	1	1	-	-	-
Other	-	44	44	-	43	43
Imported	10	109	119	18	140	158
Domestic	31	331	362	31	291	322
Total	41	440	481	49	431	480

Table 16
(Cont'd)Cucumber Unloads by Month (Cont'd)

	1963			1964			1965		
	Rail	Truck	Total	Rail	Truck	Total	Rail	Truck	Total
				- carloads -					
<u>March</u>									
Florida	4	12	16	-	8	8	2	9	11
California	-	-	-	-	-	-	-	-	-
Mexico	-	2	2	2	-	2	3	3	6
Other	-	22	22	-	3	3	-	-	-
Imported	4	36	40	2	11	13	5	12	17
Domestic	6	28	34	2	48	50	4	35	39
Total	10	64	74	4	59	63	9	47	56
<u>April</u>									
Florida	1	11	12	4	16	20	-	6	6
California	-	-	-	-	-	-	-	-	-
Mexico	1	-	1	-	-	-	-	-	-
Other	-	-	-	-	4	4	-	-	-
Imported	2	11	13	4	20	24	-	6	6
Domestic	16	72	88	11	161	172	17	122	139
Total	18	83	101	15	181	196	17	128	145
<u>May</u>									
Florida	5	19	24	7	20	27	4	21	25
California	-	-	-	-	-	-	-	-	-
Mexico	-	-	-	-	1	1	-	-	-
Other	1	5	6	-	3	3	-	-	-
Imported	6	24	30	7	24	31	4	21	25
Domestic	15	133	148	11	164	175	13	155	168
Total	21	157	178	18	188	206	17	176	193
<u>June</u>									
Florida	-	11	11	-	24	24	3	23	26
California	-	3	3	-	-	-	-	6	6
Mexico	-	-	-	-	-	-	-	-	-
Other	5	31	36	-	26	26	-	40	40
Imported	5	45	50	-	50	50	3	69	72
Domestic	14	139	153	9	158	167	5	170	175
Total	19	184	203	9	208	217	8	239	247
<u>March-June</u>									
Florida	10	53	63	11	68	79	9	59	68
California	-	3	3	-	-	-	-	6	6
Mexico	1	2	3	2	1	3	3	3	6
Other	6	58	64	-	36	36	-	40	40
Imported	17	116	133	13	105	118	12	108	120
Domestic	51	372	423	33	531	564	39	482	521
Total	68	488	556	46	636	682	51	590	641

Table 16
(Cont'd)Cucumber Unloads by Month (Cont'd)

	1966			1967			1968		
	Rail	Truck	Total	Rail	Truck	Total	Rail	Truck	Total
				- carloads -					
<u>March</u>									
Florida	-	7	7	-	2	2	-	4	4
California	-	-	-	-	-	-	-	-	-
Mexico	4	9	13	5	6	11	4	6	10
Other	-	-	-	1	8	9	-	-	-
Imported	4	16	20	6	16	22	4	10	14
Domestic	4	33	37	6	60	66	6	69	75
Total	8	49	57	12	76	88	10	79	89
<u>April</u>									
Florida	3	21	24	-	9	9	1	3	4
California	-	-	-	-	-	-	-	-	-
Mexico	-	3	3	-	5	5	1	1	2
Other	-	1	1	-	-	-	-	-	-
Imported	3	25	28	-	14	14	2	4	6
Domestic	9	81	90	5	101	106	7	110	117
Total	12	106	118	5	115	120	9	114	123
<u>May</u>									
Florida	11	23	34	3	22	25	-	24	24
California	-	1	1	-	1	1	-	1	1
Mexico	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	1	1	-	5	5
Imported	11	24	35	3	24	27	-	30	30
Domestic	11	113	124	6	142	148	5	160	165
Total	22	137	159	9	166	175	5	190	195
<u>June</u>									
Florida	-	8	8	-	14	14	-	12	12
California	1	5	6	-	4	4	-	2	2
Mexico	-	-	-	-	-	-	-	-	-
Other	-	31	31	-	45	45	-	60	60
Imported	1	44	45	-	63	63	-	74	74
Domestic	6	164	170	12	203	215	2	141	143
Total	7	208	215	12	266	278	2	215	217
<u>March-June</u>									
Florida	14	59	73	3	47	50	1	43	44
California	1	6	7	-	5	5	-	3	3
Mexico	4	12	16	5	11	16	5	7	12
Other	-	32	32	1	54	55	-	65	65
Imported	19	109	128	9	117	126	6	118	124
Domestic	30	391	421	29	506	535	20	480	500
Total	49	500	549	38	623	661	26	598	624

Source: Canada Dept. of Agriculture, Annual Unload Report

Spring Tomato Unloads by Region and Origin, in Carloads,
April to June, 1965-68

Year & Region in which unloaded	Domestic		Imported						Total					
	Rail	Truck	Florida		California		Mexico		Other		Total Imported		Domestic & Imported Rail	Truck
			Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck		
1965														
Atlantic	2	6	10	15	-	-	12	2	16	-	38	17	40	23
Central	20	260	300	119	14	-	386	2	113	142	813	263	833	523
Prairies	-	-	38	16	11	41	38	130	17	19	104	206	104	206
British Columbia	-	36	11	-	12	12	51	43	6	-	80	55	80	91
Canada	22	302	359	150	37	53	487	177	152	161	1,035	541	1,057	843
1966														
Atlantic	5	4	4	13	2	-	16	-	2	1	24	14	29	18
Central	-	228	315	119	38	-	392	-	35	154	780	273	780	501
Prairies	-	-	46	33	19	33	25	121	1	2	91	189	91	189
British Columbia	20	37	12	2	4	17	45	61	1	-	62	80	82	117
Canada	25	269	377	167	63	50	478	182	39	157	957	556	982	825
1967														
Atlantic	2	6	9	14	-	-	4	4	6	-	19	18	21	24
Central	1	239	297	136	23	-	366	16	77	145	763	297	764	536
Prairies	-	4	23	24	13	55	15	176	1	3	52	258	52	262
British Columbia	-	20	8	-	2	10	48	46	2	-	60	56	60	76
Canada	3	269	337	174	38	65	433	242	86	148	894	629	897	898
1968														
Atlantic	-	7	6	13	1	-	5	-	5	-	17	13	17	20
Central	-	249	137	256	24	1	310	68	19	134	490	459	490	708
Prairies	-	4	11	13	13	35	3	176	6	5	33	229	33	233
British Columbia	-	63	38	3	5	17	15	84	-	1	58	105	58	168
Canada	-	323	192	285	43	53	333	328	30	140	598	806	598	1,129

Source: Canada Dept. of Agriculture, Annual Unload Report

Fall Tomato Unloads by Region and Origin, in Carloads,
October to December, 1965-67

Table 18

Year & Region in which unloaded	Domestic		Imported				Total		Total	
	Domestic		Imported				Domestic & Imported		Domestic & Imported	
	Rail	Truck	Florida	California	Mexico	Other	Rail	Truck	Rail	Truck
1965										
Atlantic	-	6	2	12	1	-	15	12	15	18
Central	5	187	170	241	10	9	430	131	435	318
Prairies	1	9	4	32	15	-	51	132	52	141
British Columbia	-	4	3	33	33	-	69	42	69	46
Canada	6	206	179	318	59	9	565	317	571	523
1966										
Atlantic	2	7	1	10	1	-	12	11	14	18
Central	-	281	98	222	36	6	362	172	362	453
Prairies	-	6	-	18	8	1	27	129	27	135
British Columbia	-	13	1	27	12	-	40	56	40	69
Canada	2	307	100	277	57	7	441	368	443	675
1967										
Atlantic	4	8	5	10	-	-	15	7	19	15
Central	-	278	106	300	2	-	408	216	408	494
Prairies	-	2	20	29	1	-	50	138	50	140
British Columbia	-	2	19	39	6	1	65	52	65	54
Canada	4	290	150	378	9	1	538	413	542	703

Source: Canada Dept. of Agriculture, Annual Unload Report

Table 19

Spring Tomatoes, Unloads at 12 Principal Markets
by Rail and Truck, by Month and Origin,
April to June, 1961-68

	1961			1962		
	Rail	Truck	Total	Rail	Truck	Total
	- carloads -					
<u>April</u>						
Florida	57	60	117	57	26	83
California	-	1	1	1	-	1
Mexico	374	4	378	409	12	421
Other	3	13	16	3	10	13
Imported	434	78	512	470	48	518
Domestic	-	7	7	-	4	4
Total	434	85	519	470	52	522
<u>May</u>						
Florida	228	24	252	180	23	203
California	16	11	27	2	2	4
Mexico	214	15	229	277	22	299
Other	180	64	244	117	53	170
Imported	638	114	752	576	100	676
Domestic	3	46	49	3	66	69
Total	641	162	801	579	166	745
<u>June</u>						
Florida	23	10	33	8	1	9
California	59	45	104	34	37	71
Mexico	2	1	3	9	-	9
Other	173	145	318	256	107	363
Imported	257	201	458	307	145	452
Domestic	5	95	100	6	99	105
Total	262	296	558	313	244	557
<u>April-June</u>						
Florida	308	94	402	245	50	295
California	75	57	132	37	39	76
Mexico	590	20	610	695	34	729
Other	356	222	578	376	170	546
Imported	1,329	393	1,722	1,353	293	1,646
Domestic	8	148	156	9	169	178
Total	1,337	541	1,878	1,362	462	1,824

Table 19
(Cont'd)Spring Tomatoes, Unloads by Month (Cont'd)

	<u>1963</u>			<u>1964</u>			<u>1965</u>		
	Rail	Truck	Total	Rail	Truck	Total	Rail	Truck	Total
				-	carloads	-			
<u>April</u>									
Florida	68	77	145	45	128	173	76	69	145
California	-	-	-	-	30	30	-	-	-
Mexico	389	33	422	290	45	335	223	101	324
Other	-	5	5	-	27	27	-	16	16
Imported	457	115	572	335	230	565	299	186	485
Domestic	1	1	2	1	14	15	5	14	19
Total	458	116	574	336	244	580	304	200	504

May

Florida	278	80	358	178	38	216	183	43	226
California	3	9	12	-	27	27	-	1	1
Mexico	210	27	237	197	43	240	199	69	268
Other	4	60	64	31	46	77	3	30	33
Imported	495	176	671	406	154	560	385	143	528
Domestic	1	67	68	2	139	141	14	113	127
Total	496	243	739	408	293	701	399	256	655

June

Florida	47	12	59	114	25	139	100	38	138
California	90	36	126	30	60	90	37	52	89
Mexico	6	3	9	35	2	37	65	7	72
Other	200	114	314	100	105	205	149	115	264
Imported	343	165	508	279	192	471	351	212	563
Domestic	7	122	129	4	169	173	3	175	178
Total	350	287	637	283	361	644	354	387	741

April-June

Florida	393	169	562	337	191	528	359	150	509
California	93	45	138	30	117	147	37	53	90
Mexico	605	63	668	522	90	612	487	177	664
Other	204	179	383	131	178	309	152	161	313
Imported	1,295	456	1,751	1,020	576	1,596	1,035	541	1,576
Domestic	9	190	199	7	322	329	22	302	324
Total	1,304	646	1,950	1,027	898	1,925	1,057	843	1,900

Table 19
(Cont'd)

Spring Tomatoes, Unloads by Month (Cont'd)

	1966			1967			1968		
	Rail	Truck	Total	Rail	Truck	Total	Rail	Truck	Total
				- carloads -					
<u>April</u>									
Florida	34	35	69	52	55	107	38	83	121
California	-	1	1	1	15	16	-	1	1
Mexico	306	100	406	220	89	309	149	122	271
Other	1	13	14	1	13	14	1	19	20
Imported	341	149	490	274	172	446	188	225	413
Domestic	-	23	23	-	14	14	-	15	15
Total	341	172	513	274	186	460	188	240	428
<u>May</u>									
Florida	158	63	221	198	64	262	96	165	261
California	-	2	2	-	2	2	2	9	11
Mexico	146	66	212	178	118	296	122	156	278
Other	1	21	22	7	26	33	10	16	26
Imported	305	152	457	383	210	593	230	346	576
Domestic	23	73	96	-	98	98	-	138	138
Total	328	225	553	383	308	691	230	484	714
<u>June</u>									
Florida	185	69	254	87	55	142	59	37	96
California	63	47	110	37	48	85	41	43	84
Mexico	26	16	42	35	35	70	70	44	114
Other	37	123	160	78	109	187	19	105	124
Imported	311	255	566	237	247	484	189	229	418
Domestic	2	176	178	3	157	160	-	170	170
Total	313	431	744	240	404	644	189	399	588
<u>April-June</u>									
Florida	377	167	544	337	174	511	193	285	478
California	63	50	113	38	65	103	43	53	96
Mexico	478	182	660	433	242	675	341	322	663
Other	39	157	196	86	148	234	30	140	170
Imported	957	556	1,513	894	629	1,523	607	800	1,407
Domestic	25	272	297	3	269	272	-	323	323
Total	982	828	1,810	897	898	1,795	607	1,123	1,730

Table 20

Fall Tomatoes, Unloads at 12 Principal Markets by Rail and Truck,
by Month and Origin, October to December, 1961-67

	1961			1962		
	Rail	Truck	Total	Rail	Truck	Total
	- carloads -					
<u>October</u>						
Florida	-	-	-	-	-	-
California	236	52	288	139	62	201
Mexico	-	-	-	-	-	-
Other	-	3	3	115	3	118
Imported	236	55	291	254	65	319
Domestic	5	92	97	7	98	105
Total	241	147	388	261	163	424
<u>November</u>						
Florida	95	21	116	15	12	27
California	112	60	172	157	64	221
Mexico	10	2	12	7	-	7
Other	-	13	13	-	14	14
Imported	217	96	313	179	90	269
Domestic	6	59	65	2	91	93
Total	223	155	378	181	181	362
<u>December</u>						
Florida	122	62	184	121	32	153
California	9	12	21	15	23	38
Mexico	86	3	89	122	2	124
Other	2	24	26	-	24	24
Imported	219	101	320	258	81	339
Domestic	4	21	25	1	20	21
Total	223	122	345	259	101	360
<u>October-December</u>						
Florida	217	83	300	136	44	180
California	357	124	481	311	149	460
Mexico	96	5	101	129	2	131
Other	2	40	42	115	41	156
Imported	672	252	924	691	236	927
Domestic	15	172	187	10	209	219
Total	687	424	1,111	701	445	1,146

Table 20
(Cont'd)Fall Tomatoes, Unloads by Month (Cont'd)

	1963			1964			1965		
	Rail	Truck	Total	Rail	Truck	Total	Rail	Truck	Total
	- carloads -								
<u>October</u>									
Florida	-	-	-	-	4	4	-	2	2
California	184	54	238	239	64	303	228	69	297
Mexico	-	-	-	-	-	-	1	1	2
Other	-	5	5	-	18	18	-	8	8
Imported	184	59	243	239	86	325	229	80	309
Domestic	9	194	203	4	154	158	2	84	86
Total	193	253	446	243	240	483	231	164	395
<u>November</u>									
Florida	20	27	47	9	16	25	33	19	52
California	73	40	113	61	71	132	88	54	142
Mexico	-	-	-	2	1	3	4	4	8
Other	-	18	18	1	26	27	2	8	10
Imported	93	85	178	73	114	187	127	85	212
Domestic	23	97	120	6	114	120	3	70	73
Total	116	182	298	79	228	307	130	155	285
<u>December</u>									
Florida	203	73	276	153	134	287	146	104	250
California	7	10	17	5	48	53	2	3	5
Mexico	86	3	89	77	24	101	54	30	84
Other	2	14	16	7	33	40	7	15	22
Imported	298	100	398	242	239	481	209	152	361
Domestic	2	40	42	4	77	81	1	52	53
Total	300	140	440	246	316	562	210	204	414
<u>October-December</u>									
Florida	223	100	323	162	154	316	179	125	304
California	264	104	368	305	183	488	318	126	444
Mexico	86	3	89	79	25	104	59	35	94
Other	2	37	39	8	77	85	9	31	40
Imported	575	244	819	554	439	993	565	317	882
Domestic	34	331	365	14	345	359	6	206	212
Total	609	575	1,184	568	784	1,352	571	523	1,094

Table 20
(Cont'd)Fall Tomatoes, Unloads by Month (Cont'd)

	1966			1967		
	Rail	Truck	Total	Rail	Truck	Total
- carloads -						
<u>October</u>						
Florida	-	-	-	-	-	-
California	165	72	237	227	75	302
Mexico	1	-	1	-	-	-
Other	2	8	10	-	12	12
Imported	168	80	248	227	87	314
Domestic	-	143	143	2	154	156
Total	168	223	391	229	241	470
<u>November</u>						
Florida	25	28	53	35	47	82
California	105	60	165	149	63	212
Mexico	-	1	1	-	-	-
Other	2	13	15	-	12	12
Imported	132	102	234	184	122	306
Domestic	1	122	123	2	103	105
Total	133	224	357	186	225	411
<u>December</u>						
Florida	75	101	176	115	166	281
California	7	39	46	2	13	15
Mexico	56	25	81	9	15	24
Other	3	21	24	1	10	11
Imported	141	186	327	127	204	331
Domestic	1	42	43	-	33	33
Total	142	228	370	127	237	364
<u>October-December</u>						
Florida	100	129	229	150	213	363
California	277	171	448	378	151	529
Mexico	57	26	83	9	15	24
Other	7	42	49	1	34	35
Imported	441	368	809	538	413	951
Domestic	2	307	309	4	290	294
Total	443	675	1,118	542	703	1,245

Table 21

Cucumbers, Average Wholesale to Retail Prices
at Halifax, 1965-68

Year & Month	Domestic		Imported	
	Ontario	Nova Scotia	Florida	Mexico
	<u>Queens</u>	<u>Queens</u>		
		- cents per pound -		
<u>1965</u>				
January	-	-	.14	-
February	-	-	.17	-
March	-	.26	.22	-
April	-	.23	.18	-
May	-	.21	.14	-
June	-	.19	.12	-
July	.16	.16	.13	-
<u>1966</u>				
January	-	-	.14	-
February	-	-	-	-
March	-	.29	.24	-
April	-	.23	.14	-
May	.17	.17	.14	-
June	.20	.20	.15	-
July	.23	.23	.17	-
<u>1967</u>				
January	-	-	-	-
February	-	.30	-	-
March	-	.28	.20	-
April	-	.20	.18	-
May	-	.19	.14	-
June	-	.19	.15	-
July	-	.20	.15	-
<u>1968</u>				
January	-	-	-	-
February	-	.35	-	-
March	.26	.31	-	-
April	.25	.25	-	-
May	.22	.22	-	-
June	.21	.21	-	-
July	.20	.19	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Table 21
(Cont'd)

Cucumbers, Average Wholesale to Retail Prices
at Montreal, 1965-68

<u>Year & Month</u>	<u>Ontario Queens</u>	<u>Imported</u>	
		<u>Florida</u>	<u>Mexico</u>
		- cents per pound -	
<u>1965</u>			
January	-	.14	.13
February	-	.16	.14
March	.19	.18	.17
April	.17	.14	-
May	.14	.13	-
June	-	.12	-
July	-	.11	-
<u>1966</u>			
January	-	.10	.15
February	-	.17	.18
March	-	.21	.17
April	.19	.12	-
May	.14	.11	-
June	.18	.14	-
July	-	.15	-
<u>1967</u>			
January	-	.13	.14
February	-	.17	.19
March	.20	-	-
April	.17	.13	-
May	.13	.12	-
June	.17	.13	-
July	.19	-	-
<u>1968</u>			
January	-	.17	.20
February	.25	.20	.20
March	-	.14	.14
April	.21	.16	.15
May	.16	.14	-
June	.16	.11	-
July	.14	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Table 21
(Cont'd)

Cucumbers, Average Wholesale to Retail Prices
at Toronto, 1965-68

Year & Month	Ontario Queens	Imported		B.W.I.
		Florida	Mexico	
		- cents per pound -	-	
<u>1965</u>				
January	-	.15	.15	.16
February	.21	.17	-	.16
March	.21	.19	-	.19
April	.14	.24	-	.24
May	.12	-	-	-
June	.13	-	-	-
July	.06	-	-	-
<u>1966</u>				
January	-	.13	-	.18
February	.25	.23	-	.23
March	.23	.21	.23	-
April	.15	-	-	-
May	.12	-	-	-
June	.17	-	-	-
July	.12	-	-	-
<u>1967</u>				
January	-	.17	.16	.17
February	.22	-	-	.22
March	.19	-	-	.23
April	.15	-	-	-
May	.13	-	-	-
June	.16	-	-	-
July	.12	-	-	-
<u>1968</u>				
January	-	.22	-	-
February	.24	.23	.23	-
March	.23	.19	-	-
April	.21	-	-	-
May	.15	-	-	-
June	.15	-	-	-
July	.12	-	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Table 21
(Cont'd)

Cucumbers, Average Wholesale to Retail Prices
at Winnipeg, 1965-68

<u>Year & Month</u>	<u>Ontario Prince</u>	<u>Imported</u>	
		<u>Florida</u>	<u>Mexico</u>
		- cents per pound -	
<u>1965</u>			
January	-	.20	-
February	.29	.21	-
March	.27	-	-
April	.22	-	-
May	.20	-	-
June	.19	-	-
July	-	-	-
<u>1966</u>			
January	-	.19	-
February	.32	.24	-
March	.29	.26	-
April	.25	-	-
May	.16	.16	-
June	.21	.19	-
July	.21	-	-
<u>1967</u>			
January	-	.21	-
February	.28	.23	.25
March	.24	-	.21
April	.19	-	-
May	.16	-	-
June	.18	-	-
July	.18	-	-
<u>1968</u>			
January	-	.23	-
February	.31	.29	-
March	.27	-	-
April	.24	-	-
May	.19	-	-
June	.19	-	-
July	.15	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Table 21
(Cont'd)

Cucumbers, Average Wholesale to Retail Prices
at Edmonton, 1965-68

<u>Year & Month</u>	<u>Ontario</u>	<u>Alberta</u>	<u>Imported</u>	
	<u>Queens</u>	<u>Queens</u>	<u>Florida</u>	<u>Mexico</u>
	- cents per pound -			
<u>1965</u>				
January	-	-	-	-
February	-	-	-	-
March	.29	-	-	-
April	.24	-	-	-
May	.21	-	-	-
June	.24	-	-	-
July	.24	-	-	-
<u>1966</u>				
January	-	-	.21	.21
February	-	-	.24	.27
March	.32	-	-	.31
April	.27	.27	-	.33
May	.21	.21	-	-
June	.25	.25	-	-
July	.24	.24	-	-
<u>1967</u>				
January	-	-	.22	.22
February	-	-	.25	.25
March	-	-	.28	.28
April	.23	.23	.25	.25
May	.23	.23	-	-
June	.22	.22	-	-
July	.24	.24	-	-
<u>1968</u>				
January	-	-	.25	.25
February	-	-	.30	.30
March	.31	.31	.30	.30
April	.30	.30	-	-
May	.25	.25	-	-
June	.24	.24	-	-
July	.24	.24	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Cucumbers, Average Wholesale to Retail Prices
at Vancouver, 1965-68

Table 21
(Cont'd)

<u>Year & Month</u>	<u>B.C. greenhouse</u>	<u>Imported</u>		
		<u>Florida</u>	<u>California</u>	<u>Mexico</u>
	-	- cents per pound -		
<u>1965</u>				
January	-	.21	-	.21
February	-	.22	-	.22
March	.27	.28	-	.28
April	.28	.26	-	.26
May	.20	-	-	-
June	.20	-	-	-
July	-	-	-	-
<u>1966</u>				
January	-	-	-	.20
February	-	-	-	.23
March	.40	-	-	.26
April	.41	-	.18	.29
May	.55	-	-	-
June	.22	-	-	-
July	.21	-	-	-
<u>1967</u>				
January	-	-	-	.20
February	-	-	-	.21
March	.28	-	-	.22
April	.25	-	-	.17
May	.22	-	-	-
June	.21	-	-	-
July	.22	-	-	-
<u>1968</u>				
January	-	-	-	.25
February	-	-	-	.30
March	.38	-	-	.28
April	.31	-	-	.37
May	.25	-	-	-
June	.22	-	-	-
July	.26	-	.20	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Table 22

Tomatoes, Average Wholesale to Retail Prices
at Halifax, 1965-68

Year & Month	Domestic		Imported				
	Nova Scotia	Ontario	Florida		California	Mexico	
	green- house	green- house	vine ripe	mature green	mature green	vine ripe	mature green
			cents per pound				
<u>1965</u>							
March	-	-	.29	-	-	-	-
April	.50	-	.27	-	-	-	-
May	.45	-	-	-	-	-	-
June	.38	-	-	-	-	-	-
July	.38	.38	-	-	-	-	-
October	.37	-	-	-	-	-	-
November	.33	-	-	-	-	-	-
December	.44	-	-	-	-	-	-
<u>1966</u>							
January	-	-	-	-	-	-	-
February	-	-	.28	-	-	-	-
March	-	-	.26	-	-	-	-
April	-	.44	.32	-	-	-	-
May	.34	.36	-	-	-	.28	-
June	.41	.40	-	-	-	-	-
July	.43	-	-	-	-	-	-
October	.32	-	-	-	-	-	-
November	.34	-	-	-	-	-	-
December	.35	-	-	-	-	-	-
<u>1967</u>							
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	.45	-	-	-	-	-	-
May	.42	.42	-	-	-	-	-
June	.42	.42	-	-	-	-	-
July	.46	.53	-	-	-	-	-
October	-	-	-	-	-	-	-
November	.35	.35	-	-	-	-	-
December	.37	.37	-	-	-	-	-
<u>1968</u>							
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April	.60	-	-	-	-	-	-
May	.51	-	-	-	-	-	-
June	.43	-	-	-	-	-	-
July	.44	.45	-	-	-	-	-

Source: Canada, Dept. of Agriculture, Wholesale to Retail Quotations

Table 22
(Cont'd)

Tomatoes, Average Wholesale to Retail Prices at Montreal, 1965-68

Year & Month	Imported									
	Ontario		Ohio (b)		Florida		California		Mexico	
	Greenhouse Medium	Pink	Greenhouse	Pink	vine ripe	mature green	mature green	vine ripe	mature green	
	Red				Unspecified - cents per pound -					
<u>1965</u>										
March	-	-	-	-	-	-	-	.19	.23	
April	.39	.55	-	-	.21	.20	-	.22	-	
May	.35	.40	.49	.45	-	.17	-	.25	.18	
June	.32	.37	.47	.40	-	.15	.16	.19	-	
July	.30	.28	-	.41	-	-	.16	-	-	
Oct.	.30	.37	-	-	-	-	.15	-	-	
Nov.	.29	.35	.44	-	-	.22	.16	-	.20	
Dec.	.30	.38	.49	-	.29	.13	-	.23	.20	
<u>1966</u>										
Jan.	-	-	.39	-	.23	.12	-	.17	.14	
Feb.	-	-	-	-	.22	-	-	.19	.14	
March	-	-	-	-	.18	-	-	.16	.13	
April	.36	.42	.52	-	.19	.16	-	.20	.16	
May	.29	.31	.41	-	.23	.15	-	.18	.14	
June	.35	.38	.43	-	-	.17	.21	-	-	
July	.33	.35	.44	-	-	-	.18	-	-	
Oct.	.19	.30	-	-	-	-	.15	-	-	
Nov.	.28	.33	.34	-	.31	-	.19	-	-	
Dec.	.30	.38	-	.46	.32	.20	-	.29	.18	

Table 22
(Cont'd)

Year & Month	Ontario		Ohio(b)		Imported		California		Mexico	
	Greenhouse		Greenhouse		Florida		mature		vine	
	Red	Pink	Red	Pink	vine ripe	mature green	green	ripe	mature green	green
					Unspecified - cents per pound -					
<u>1967</u>										
Jan.	-	-	-	-	.20	.14	-	.16	-	-
Feb.	-	-	-	-	.16	.13	-	.16	.14	.14
March	-	-	-	-	-	-	-	.16	.14	.14
April	.36	.45	-	-	-	-	-	.20	-	-
May	.31	.35	-	-	.31	.14	-	.17	-	-
June	.31	.39	-	-	-	.17	.19	.21	-	-
July	-	.51	-	.54	-	-	-	-	-	-
Oct.	.22	.28	-	.36	-	-	.13	-	-	-
Nov.	.27	.32	-	.38	.26	.13	.12	-	-	-
Dec.	-	.33	-	.35	.23	.13	-	.23	-	-
<u>1968</u>										
Jan.	-	-	-	-	.26	.18	-	.23	-	-
Feb.	-	-	-	-	.33	-	-	.22	-	-
March	-	-	-	.61	.30	.19	-	.23	-	-
April	.46(a)	.50	-	.61	-	.18	-	.29	-	-
May	.37(a)	.37	-	.47	-	.16	-	.23	-	-
June	.39(a)	.34	-	.46	-	.15	-	.18	-	-
July	.34(a)	.39	-	.45	-	-	.19	-	-	-

(a) No. 1 large size
(b) 8 lb-containers

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Tomatoes, Average Wholesale to Retail Prices
at Toronto. 1965-68

Table 22
(Cont'd)

Year & Month	Ontario greenhouse Medium	Imported				
		Florida		California	Mexico	
		vine	mature	mature	vine	mature
		ripe	green	green	ripe	green
		-	cents per pound	-		
<u>1965</u>						
March	-	-	.19	-	.20	.19
April	.39	-	.20	-	.24	.20
May	.34	-	.20	-	.27	.20
June	.30	-	.14	-	.21	.15
July	.22	-	-	-	-	-
Oct.	.25	-	-	.16	-	-
Nov.	.26	-	-	.22	-	-
Dec.	.31	.24	.17	.20	-	-
<u>1966</u>						
Jan.	-	.25	.13	-	-	-
Feb.	-	.21	.15	-	.19	.16
March	-	.19	.14	-	.17	.14
April	.36	.21	.14	-	.22	.18
May	.27	.26	.14	-	.18	.15
June	.32	.23	.16	.18	.18	-
July	.30	-	-	.21	-	-
Oct.	.15	-	-	.16	-	-
Nov.	.20	-	.21	.21	-	-
Dec.	.26	.32	.21	.21	.26	.19
<u>1967</u>						
Jan.	-	-	.12	-	.15	.13
Feb.	-	.16	.12	-	.15	-
March	-	-	.15	-	.15	-
April	.27	-	.16	-	.19	-
May	.26	.13	.15	-	.17	-
June	.28	-	.21	.23	.26	-
July	.36	-	-	-	-	-
Oct.	.18	-	-	.13	-	-
Nov.	.19	-	.16	.14	-	-
Dec.	.17	-	.15	-	-	-
<u>1968</u>						
Jan.	-	-	-	-	-	-
Feb.	-	-	-	-	-	-
March	-	.31	.22	-	.26	-
April	.43	.41	.30	-	.32	-
May	.35	-	.23	-	.25	-
June	.30	-	.22	-	.18	-
July	.31	-	.22	.20	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Tomatoes, Average Wholesale to Retail Prices
at Winnipeg, 1965-68

Table 22
(Cont'd)

Year & Month	Ont. green- house	Imported				
		Florida		Calif.	Mexico	
		vine	mature	mature	vine	mature
		ripe	green	green	ripe	green
- cents per pound -						
<u>1965</u>						
March	-	-	.22	.22	-	.22
April	-	-	.22	.22	-	.22
May	-	-	.19	.20	-	.20
June	-	-	.19	.19	-	.20
July	-	-	.18	.18	-	-
October	-	-	-	.16	-	.17
November	.34	-	.24	.20	-	.20
December	.38	-	.24	.24	-	.24
<u>1966</u>						
January	-	-	-	-	.20	.17
February	-	-	-	-	.20	.18
March	-	-	-	-	.19	.15
April	.39	-	-	-	.25	.20
May	.34	-	-	-	.21	.17
June	.39	-	-	-	.22	.18
July	.36	-	-	.21	.24	.21
October	-	-	-	.16	-	-
November	.34	-	-	.19	-	-
December	.29	-	-	.22	.31	-
<u>1967</u>						
January	-	-	-	-	.22	.17
February	-	-	-	-	.19	.15
March	-	-	-	-	.19	.15
April	-	-	-	-	.23	-
May	.37	-	-	-	.21	-
June	.43	-	.20	-	.23	-
July	.55	-	.33	-	-	-
October	-	-	-	.15	-	-
November	-	-	-	.15	-	-
December	-	-	-	.16	-	-
<u>1968</u>						
January	-	-	.19	.19	-	.21
February	-	-	.18	.18	-	.18
March	-	-	-	-	.25	.16
April	-	-	-	-	.29	-
May	-	.22	-	-	.26	-
June	.44	.20	-	-	.23	-
July	.44	-	-	.19	-	.20

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Tomatoes, Average Wholesale to Retail Prices
at Edmonton, 1965-68

Table 22
(Cont'd)

Year & Month	Domestic			Imported				
	Ont.	Alberta	B.C.	Florida		Calif.	Mexico	
	green- house	green- house	green- house	vine ripe	mature green	mature green	vine ripe	mature green
				- cents per pound		-		
<u>1965</u>								
March	-	-	-	.23	.17	.17	.24	.17
April	-	-	-	-	-	-	.26	-
May	-	-	-	-	-	-	.28	-
June	-	.42	.42	-	-	.19	.26	-
July	-	.42	.42	-	-	.19	-	-
October	-	-	-	-	-	.17	-	-
November	-	.38	-	-	-	.23	-	.23
December	-	.44	.44	-	-	-	-	.28
<u>1966</u>								
January	-	-	-	-	-	-	.23	.18
February	-	-	-	-	-	-	.24	-
March	-	-	-	-	-	-	.19	-
April	-	-	-	-	-	-	.20	-
May	.45	-	.45	-	.19	-	.23	-
June	-	.29	-	-	.20	.21	.24	.20
July	-	-	-	-	.21	.21	-	-
October	-	-	-	-	-	.16	-	-
November	-	-	-	-	-	.23	-	-
December	-	-	-	-	-	.25	-	-
<u>1967</u>								
January	-	-	-	-	-	-	.23	-
February	-	-	-	-	-	-	.19	-
March	-	-	-	-	-	-	.20	-
April	-	-	-	-	-	-	.24	-
May	-	-	-	-	-	-	.22	-
June	-	.44	.44	-	-	-	.30	-
July	-	.58	.58	-	.38	.38	.42	-
October	-	-	-	-	-	.17	-	-
November	-	-	-	-	-	.16	-	-
December	-	-	-	-	.19	.19	.30	-
<u>1968</u>								
January	-	-	-	-	.22	.22	.27	-
February	-	-	-	-	-	-	.26	-
March	-	-	-	-	-	-	.27	-
April	-	-	-	-	-	-	.32	-
May	-	.40	-	-	.22	-	.29	-
June	-	.37	-	.21	.20	.20	.21	-
July	-	.37	-	.27	-	.21	.27	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Tomatoes, Average Wholesale to Retail Prices
at Vancouver, 1965-68

Table 22
(Cont'd)

Year & Month	B.C. green- house	Imported				
		Florida		Calif.	Mexico	
		vine	mature	mature	vine	mature
		ripe	green	green	ripe	green
- cents per pound -						
<u>1965</u>						
March	-	-	-	-	-	.22
April	-	-	-	-	-	.24
May	.56	-	-	-	-	.23
June	.41	-	.16	.15	-	.21
July	.36	-	-	.19	-	-
October	.24	-	-	.18	-	-
November	.30	-	-	.25	-	-
December	.38	-	-	.33	-	.31
<u>1966</u>						
January	-	-	.17	-	-	.19
February	-	.21	-	-	.21	.19
March	-	-	-	-	-	.15
April	.54	-	-	-	-	.20
May	.48	-	-	-	-	.17
June	.33	.26	.18	.24	-	.17
July	.33	-	-	.25	-	-
October	.22	-	-	-	-	-
November	.28	-	-	-	-	-
December	-	-	-	-	.28	-
<u>1967</u>						
January	-	-	-	-	.21	-
February	-	-	-	-	.20	-
March	-	-	-	-	.20	-
April	.60	-	-	-	.23	-
May	.51	-	-	-	.22	-
June	.40	.24	-	-	.23	-
July	.56	-	-	-	.38	-
October	-	-	-	-	-	-
November	.23	-	-	-	-	-
December	-	.23	-	-	-	-
<u>1968</u>						
January	-	.25	-	-	.27	-
February	-	-	-	-	.26	-
March	-	-	-	-	.27	-
April	.58	-	-	-	.34	-
May	.54	.23	-	-	.28	-
June	.34	.20	-	-	.20	-
July	.33	-	-	-	-	-

Source: Canada Dept. of Agriculture, Wholesale to Retail Quotations

Monthly Average Prices of Cucumbers and Tomatoes,
f.o.b. Florida, 1959-67

	Jan.	Feb.	Mar.	Apr.	May - U.S. cents per pound -	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>Cucumbers</u>												
1959	11.2	14.0	8.6	7.2	10.0	5.7	-	-	-	6.3	7.4	15.7
1960	9.1	9.6	13.7	12.4	6.5	4.5	-	-	-	9.0	4.7	5.1
1961	9.4	11.2	9.2	5.8	4.7	7.2	-	-	-	3.6	4.4	4.7
1962	7.9	8.1	9.2	10.6	8.2	6.2	-	-	-	4.9	6.1	10.0
1963	12.2	-	5.8	6.2	4.0	7.1	-	-	-	4.2	4.8	7.1
1964	10.7	-	8.9	5.6	5.3	5.6	-	-	-	7.8	4.9	5.0
1965	8.2	10.4	12.3	7.3	4.7	4.6	-	-	-	5.1	4.9	6.9
1966	8.9	11.2	-	6.7	6.0	6.8	-	-	-	5.3	6.6	9.3
1967	9.7	13.8	13.2	8.2	5.4	6.6	-	-	-	5.5	4.6	5.0
<u>Tomatoes</u>												
1959	10.3	8.3	8.8	10.3	8.5	5.3	-	-	-	8.3	10.6	10.5
1960	10.8	11.6	11.6	11.2	9.8	8.4	-	-	-	-	16.9	8.1
1961	6.3	6.6	9.5	9.2	6.5	7.5	-	-	-	11.3	7.8	7.5
1962	9.0	9.0	8.0	7.2	7.7	8.7	-	-	-	-	9.4	8.3
1963	12.6	11.3	6.3	7.8	6.1	7.2	-	-	-	-	11.3	8.1
1964	9.0	11.3	11.4	9.4	7.9	9.4	-	-	-	-	12.2	8.9
1965	8.5	8.2	11.2	11.0	10.2	10.7	-	-	-	-	13.5	8.6
1966	11.0	8.2	9.5	10.3	7.3	9.0	-	-	-	13.6	13.6	11.5
1967	7.9	10.1	10.3	9.9	9.0	10.3	-	-	-	-	8.3	9.4

Table 24

Tomatoes: Dates of Application and Removal of Seasonal, M.F.N.,
Specific Duty of 1½ cents per pound, by Region, 1957-68

Year	Atlantic Provinces ^(a)		Quebec & Ontario ^(b)		Manitoba & West ^(c)	
	On	Off	On	Off	On	Off
1957	- not applied	-	June 25	Oct. 25	July 12	Oct. 13
1958	"		June 28	Nov. 15	May 31	Nov. 15
1959	"		June 24	Dec. 7	June 13	Oct. 15
1960	Aug. 17	Oct. 14	June 25	Jan.1/61	July 27	Oct. 28
1961	- not applied	-	July 6	Jan.1/62	May 30	Nov. 9
1962	Aug. 4	Oct. 24	Aug. 2	Dec. 12	Aug. 1	Dec. 5
1963	Aug. 3	Oct. 19	- not applied	-	July 24	Nov. 15
1964	Sept. 5	Oct. 10	July 22	Oct. 13	July 22	Oct. 20
1965	- not applied	-	July 22	Oct. 20	July 9	Oct. 20
1966	- not applied	-	Aug. 4	Oct. 28	Aug. 5	Oct. 13
1967	Sept. 6	Oct. 23	July 18	Oct. 23	July 20	Oct. 23
1968	Sept. 6	Oct. 16	July 11	Nov. 19	Aug. 9	Oct. 21

(a) Excludes Newfoundland

(b) Actually entry ports east of Port Arthur, Ont.

(c) Actually Port Arthur and entry ports west thereof

Source: Appraisers Bulletins, Dept. of National Revenue

Cucumbers n.o.p.: Dates of Application and Removal of Seasonal,
M.F.N., Specific Duty of 2½ cents per pound, by
Region, 1957-68

Year	Atlantic Provinces ^(a)		Quebec & Ontario ^(b)		Manitoba & West ^(c)	
	On	Off	On	Off	On	Off
1957	April 30 ^(d)	July 23 ^(d)	April 9	July 2	June 4	Aug. 27
1958	May 15 ^(d)	Aug. 7 ^(d)	April 22	July 15	May 27	Aug. 19
1959	April 15 ^(d)	Sept. 16 ^(d)	April 15	Sept. 16	May 21	Sept. 25
1960	May 18	Sept. 16	April 26	Aug. 26	May 27	Oct. 28
1961	May 27	Oct. 23	March 17	Sept. 2	April 12	Sept. 13
1962	May 30	Oct. 24	April 3	Sept. 4	April 3	Sept. 4
1963	April 26	Sept. 27	April 2	Sept. 3	April 2	Sept. 3
1964	April 3	Sept. 4	April 3	Sept. 4	April 3	Sept. 4
1965	April 2	Sept. 3	April 6	Sept. 7	June 24	Oct. 15
1966	April 21	Sept. 22	April 13	Sept. 14	July 5	Oct. 7
1967	April 13	Sept. 14	April 4	Sept. 5	June 30	Oct. 30
1968	April 9	Sept. 10	April 17	Sept. 18	June 20	Oct. 21

(a) Excludes Newfoundland

(b) Actually entry ports east of Port Arthur, Ont.

(c) Actually Port Arthur and entry ports west thereof

(d) Includes Newfoundland

Source: Appraisers Bulletins, Dept. of National Revenue

Table 25

Rail and Truck Freight Rates on Tomatoes and Cucumbers From
Leamington, Ontario, and Selected U.S. Centres to Selected
Destinations in Canada

<u>From</u>		<u>Product</u>	<u>TO:</u>					
			<u>Hfx.</u>	<u>Mtl.</u>	<u>Tor.</u>	<u>Wpg.</u>	<u>Edm.</u>	<u>Van.</u>
			- Canadian \$ per cwt. -					
Leamington, Ont.	Truck	Tomatoes	3.94	2.25	.75	3.50	4.00	5.00
	"	Cucumbers	3.94	1.50	1.00	2.75	3.43	4.28
	Rail	Both	1.39	1.18	.73	1.87	2.88	5.91
Palmetto, Fla.	Truck	Tomatoes	4.77	3.24	2.84	4.86	5.27	5.27
	"	Cucumbers	3.78	2.25	2.16	3.99	4.41	4.41
	Rail	Both	2.85	2.43	2.32	3.36	4.13	2.86
Nogales, Ariz.	Truck	Tomatoes	6.19	4.65	4.20	3.60	3.60	3.60
	"	Cucumbers	5.50	3.96	3.57	3.07	3.07	3.07
	Rail	Both	3.32	2.81	2.75	2.34	2.81	2.06
Crow's Landing Calif.	Truck	Tomatoes	7.08	5.55	5.10	3.90	3.30	2.40
	"	Cucumbers	6.26	4.73	4.34	3.33	2.81	2.04
	Rail	Both	3.32	2.81	2.75	2.34	2.35	1.53

Advantage (+) or Disadvantage (-), Place of Origin
Relative to Leamington

Palmetto	Truck	Tomatoes	- .83	- .99	-2.09	-1.36	-1.27	- .27
	"	Cucumbers	+ .16	- .75	-1.16	-1.24	- .98	- .13
	Rail	Both	-1.46	-1.25	-1.59	-1.49	-1.25	+3.05
Nogales	Truck	Tomatoes	-2.25	-2.40	-3.45	- .10	+ .40	+1.40
	"	Cucumbers	-1.56	-2.46	-2.57	- .32	+ .36	+1.21
	Rail	Both	-1.93	-1.63	-2.02	- .47	+ .07	+3.85
Crow's Landing	Truck	Tomatoes	-3.14	-3.30	-4.35	- .40	+ .70	+2.60
	"	Cucumbers	-2.32	-3.23	-3.34	- .58	+ .62	+2.24
	Rail	Both	-1.93	-1.63	-2.02	- .47	+ .53	+4.38

Source: Derived from data obtained from C.N.R. Freight Sales Dept.
and various trucking companies

APPENDIX II

TARIFF HISTORY

TARIFF HISTORYTariff Item 8712-1 (GATT); previously 87(12)

Vegetables, fresh, in their natural state, the weight of the packages to be included in the weight for duty:

	<u>B.P.</u>	<u>M.F.N.</u>	<u>Gen.</u>
Cucumbers, n.o.p. per pound	Free	2¼¢ or 10 p.c.	2¼¢ or 10 p.c.

In any 12 month period ending 31st March, the specific duty shall not be maintained in force in excess of 22 weeks which may be divided into two separate periods, and the 10 per cent duty shall apply whenever the specific duty is not in effect.

Prior to April 10, 1959, the item was numbered 87(h) and included cucumbers imported by manufacturers for use in the manufacture of pickles or preserves; as of April 10, 1959 the latter were separately provided for under Tariff Item 87(11), now 8711-1.

From June 1, 1950 to April 10, 1959, Tariff Item 87(h) was worded as follows:

Vegetables, fresh, in their natural state, the weight of the packages to be included in the weight for duty:

	<u>B.P.</u>	<u>M.F.N.</u>	<u>Gen.</u>
Cucumbers per pound	Free	2¼¢ or 10 p.c.	2¼¢ or 10 p.c.

Provided that, when the cucumbers specified in sub-item (h) of Item 87 are imported under the Most-Favoured-Nation or General Tariff the specific duty of two and one-quarter cents per pound shall not be maintained in force in any twelve months ending March 31 for a period in excess of 12 weeks, and whenever the specific duty of two and one-quarter cents per pound is not levied the ad valorem duty of 10 per centum shall apply.

Tariff Item 87(h), as created by legislation effective June 1, 1950, represented a formalization, and extension to goods from countries subject to the General Tariff, of the M.F.N. rate of duty on fresh cucumbers negotiated under the GATT agreement signed in 1947; the M.F.N. rates as negotiated under GATT at that time were made effective as of January 1, 1948, by P.C. 5270, Dec. 23, 1947, as recorded in Department of National Revenue Memorandum D No. 48 T.A. 28, Supplement No. 1, dated December 26, 1947.

Tariff Item 8724-1 (GATT): previously 87(24)

Vegetables, fresh, in their natural state, the weight of the packages to be included in the weight for duty:

	<u>B.P.</u>	<u>M.F.N.</u>	<u>Gen.</u>
Tomatoes per pound	Free	Free or 1½¢ or 10 p.c.	Free or 1½¢ or 10 p.c.

The Free rate shall apply during the months of January, February, and March.

During the remaining months in any 12 month period ending 31st March, the specific duty shall not be maintained in force in excess of 32 weeks, and the 10 per cent duty shall apply whenever the specific duty is not in effect.

Prior to April 10, 1959, the item was numbered 87(n), and from June 1, 1950 to April 10, 1959, was worded as follows:

Vegetables, fresh, in their natural state, the weight of the packages to be included in the weight for duty:

	<u>B.P.</u>	<u>M.F.N.</u>	<u>Gen.</u>
Tomatoes per pound	Free	1½¢ or 10 p.c.	1½¢ or 10 p.c.

Provided that, when the tomatoes specified in sub-item (n) of item 87 are imported under the Most-Favoured-Nation or General Tariff the specific duty of one and one-half cents per pound shall not be maintained in force in any twelve months ending March 31 for a period in excess of 32 weeks, and whenever the specific duty of one and one-half cents per pound is not levied the ad valorem duty of 10 per centum shall apply.

Tariff Item 87(n), as created by legislation effective June 10, 1950, represented a formalization, and extension to goods from countries subject to the General Tariff, of the M.F.N. rate of duty on fresh tomatoes negotiated under the GATT agreement signed in 1947; the M.F.N. rates as negotiated under GATT at that time were made effective as of January 1, 1948, by P.C. 5270, Dec. 23, 1947, as recorded in Department of National Revenue Memorandum D No. 48 T.A. 28, Supplement No. 1, dated December 26, 1947.

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